Phytoplankton productivity in Lancaster Sound and approaches during the summer of 1979

B. Irwin, P. Dickie, P. Lindley,
and T. Platt

Marine Ecology Laboratory
Ocean Science and Surveys, Atlantic
Department of Fisheries and Oceans

Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, N.S. B2Y 4A2

January 1984

**Canadian Data Report of
Fisheries and Aquatic Sciences
No. 423**

85-5190/

Canadian Data Report of Fisheries and Aquatic Sciences

These reports provide a medium for filing and archiving data compilations where little or no analysis is included. Such compilations commonly will have been prepared in support of other journal publications or reports. The subject matter of Data Reports reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries management, technology and development, ocean sciences, and aquatic environments relevant to Canada.

Numbers 1-25 in this series were issued as Fisheries and Marine Service Data Records. Numbers 26-160 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Data Reports. The current series name was changed with report number 161.

The correct citation appears above the abstract of each report.

Rapport statistique canadien des sciences halieutiques et aquatiques

Ces rapports servent de base à la compilation des données de classement et d'archives pour lesquelles il y a peu ou point d'analyse. Cette compilation aura d'ordinaire été préparée pour appuyer d'autres publications ou rapports. Les sujets des Rapports statistiques reflètent la vaste gamme des intérêts et politiques du Ministère des Pêches et des Océans, notamment gestion des pêches, techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les numéros 1 à 25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer. Les numéros 26-160 ont été publiés à titre de Rapports statistiques du Service des pêches et de la mer, Ministère des Pêches et de l'Environnement. Le nom de la série a été modifié à partir du numéro 161.

Le titre exact paraît au haut du résumé de chaque rapport.

Canadian Data Report

Fisheries and Aquatic Sciences No. 423

PHYTOPLANKTON PRODUCTIVITY IN LANCASTER SOUND AND APPROACHES DURING THE SUMMER OF 1979

B. Irwin, P. Dickie, P. Lindley and T. Platt

Marine Ecology Laboratory
Ocean Sciences and Surveys, Atlantic
Department of Fisheries and Oceans

Bedford Institute of Oceanography
Dartmouth, Nova Scotia
B2Y 4A2

This is the twenty-first Data Report from the Marine Ecology Laboratory, Dartmouth.

©Ministry of Supply and Services Canada 1984
Cat. No. Fs 97-13/423 ISSN 0706-6465

Correct citation for this publication:

Irwin, B., P. Dickie, P. Lindley and T. Platt. 1984. Phytoplankton productivity in Lancaster Sound and approaches during the summer of 1979. Can. Data Rept. Fish. Aquat. Sci. No. 423: 103 p.

CONTENTS

	Page
Abstract/Résumé	iv
Introduction	1
Sampling	1
Methods	1
Productivity	1
Organic Particulates	2
Nutrients	2
Incubation Light Intensity	2
Estimation of Photosynthetic Parameters	2
Acknowledgements	3
References	3
Table legend	5
Light Saturation Data, particulates and inorganic nutrients	7
Figure	103
Location of sampling stations in Lancaster Sound	

Abstract

Irwin, B., P. Dickie, P. Lindley and T. Platt. 1984. Phytoplankton productivity in Lancaster Sound and approaches during the summer of 1979. Can. Data Rept. Fish. Aquat. Sci. No. 423: 103 p.

During the period 12 July to 17 October 1979, water samples for phytoplankton productivity studies were collected from CCGS Louis S. St. Laurent in Lancaster Sound and approaches. In this report we make available the raw data and fitted light saturation parameters.

Résumé

Irwin, B., P. Dickie, P. Lindley and T. Platt. 1984. Phytoplankton productivity in Lancaster Sound and approaches during the summer of 1979. Can. Data Rept. Fish. Aquat. Sci. No. 423: 103 p.

Pendant la periode du 12 Juillet au 17 Octobre, des echantillons de l'eau ont été capter du CCGS Louis S. St. Laurent dans le détroit de Lancaster et ces atterages pour étudier la productivité du phytoplancton. Dans ce rapport nous présentons les données brutes, ainsi que les parametres qui furent calculés pour representes les courbes de production on fonction de la lumière.

Introduction

This is the eighth in a series of data reports giving the results of experiments on photosynthetic production versus light intensity for natural phytoplankton populations in the North Atlantic and adjacent waters north of 50°N. Samples were collected from CCGS Louis S. St. Laurent from 12 July to 17 October, 1979, on an opportunity basis. The majority of the samples were collected in Lancaster Sound between 20 July and 29 September but some samples were also taken in the western Arctic and Beaufort Sea.

Sampling

Water samples wer collected with 30 l Niskin bottles or off the surface with a plastic bucket. Most samples were collected from 10 m.

Methods

Productivity

Primary productivity was measured using the ^{14}C method described in Strickland and Parsons (1972). 70 mls of sodium bicarbonate ^{14}C solution was mixed with 7 l of sea water to yield an approximate activity of 5 µci per 100 ml of sample. 60 light and 2 dark bottles were filled with 100 ml aliquots and placed in temperature controlled incubators. Temperature control was maintained by pumping sea water through the incubators. Illumination was provided by 2000 w tungsten-halogen lamps (New Halene OHS 2000) which had a maximum intensity of approximately 1000 W m^{-2} P.A.R.

Incubations were normally terminated after 4 hours and samples filtered immediately onto 0.45 µm millipore filters and stored frozen at -20°C. In the laboratory, filters were thawed, exposed to HCl fumes and then counted in a liquid scintillation counter.

Organic Particulates

Nucleic acids, protein, adenesine triphosphate, particulate carbon and nitrogen and chlorophyll concentrations were measured using methods described in Irwin et al. (1980).

Nutrients

Four inorganic nutrients were measured from each sample. Samples were stored frozen at -20°C on board ship and analyzed later in the laboratory using the following methods.

Inorganic Phosphate - Industrial method 155-71 W

Silicate - Industrial method 186-72 W

Nitrate - Industrial method 158-71 W

Ammonia - Colorometric method of Solarzano (1969)

Incubation light intensity

Photosynthetically active radiation (PAR) was measured at each bottle position using a Licor Li 185A quantum meter fitted with a 190 S underwater quantum sensor.

Estimation of photosynthetic parameters

Measurements of specific production, P^B, and irradiance, I, were used to estimate parameters in the equation of Platt et al. (1981).

$$P^B = P_s(1-e^{-\alpha I/P_s})e^{-\beta I/P_s}$$

P ($mgc(mgChl)^{-1}h^{-1}$) is the light-saturated rate of specific production in the absence of photoinhibition, $\alpha(mgc(mgChl)^{-1}h^{-1}w^{-1}m^{-2})$ is the initial slope of the PI curve and β(same units as α) is a parameter that characterises photoinhibition. Complete details of the fitting routine are given in Irwin et al. (1982) and a discussion of the mathematical basis for this technique is in Irwin et al. (1980).

Acknowledgements

We wish to thank Dave Rudderham and Carla Caverhill for their assistance in the calculation of the parameters and the preparation of the data tables. A special thank you goes to the Captain, Officers and crew of the Louis S. St. Laurent for their assistance and co-operation in the collection of this data set.

References

IRWIN, B.D., W.G. HARRISON, C.L. GALLEGOS and T. PLATT. 1980. Phytoplankton experiments and nutrient measurements in the Labrador Sea, Davis Strait, Baffin Bay and Lancaster Sound from 26 August to 14 September 1978. Can. Data Rept. Fish Aquat. Sci. No. 211: 103 pages.

IRWIN, B.D., T. PLATT, W.G. HARRISON, C.L. GALLEGOS and P. LINDLEY. 1982. Phytoplankton productivity experiments and nutrient measurements in Ungava Bay, N.W.T. from August 1 to September 3, 1979. Can. Data Rept. Fish. Aquat. Sci. No. 287: 208 pages.

SOLORZANO, L. 1969. Determinantion of ammonia in natural waters by the phenolhypochlorite method. Limnol. Oceanogr. 14: 799-801.

STRICKLAND, J.D.H. and T.R. PARSONS. 1972. A practical handbook of sea-water analysis. Bull. Fish. Res. Bd. Canada No. 167: 311 pages.

Light Saturation Data, particulates and Inorganic Nutrients

SYMBOLS AND ABBREVIATONNS

P = mg C(mg Chl)$^{-1}$ m^{-3} h^{-1}

I = Watts m^{-2}

P_m = mg C (mg Chl)$^{-1}$h^{-1}

P_s = mg C (mg Chl)$^{-1}$h^{-1}

Alpha = mg C (mg Chl)$^{-1}$h^{-1}W^{-1}m^{-2}

Beta = mg C (mg Chl)$^{-1}$h^{-1}W^{-1}m^{-2}

organic particulates = mg m^{-3}

Inorganic nutrients = mg at m^{-3}

The 90% confidence intervals of parameter estimates are in closed brackets below parameter estimates.

LOUIS SAINT LAURENT

LAT 45 25.0'N LONG 60 19.0'W STATION NO. 1
DATE 12/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
966	6.10	905	6.52	828	6.26	813	6.55
797	6.53	767	5.79	613	6.74	590	7.29
552	5.67	529	7.48	314	7.23	282	5.67
214	7.65	173	6.93	147	7.35	125	5.41
101	5.52	98	6.69	98	6.75	65	4.24
61	5.17	60	4.71	52	3.18	42	3.18
41	3.32	39	2.56	32	1.88	27	2.05
27	1.90	27	2.05	23	1.34	18	1.29
17	1.19	16	1.36	14	.82	11	.84
10	.56	10	.72	5	.32	5	.24
3	.01	2	.03				

PARAMETER VALUES

PS :	ALPHA :	BETA :
8.24	.099	.0027
(7.60, 8.88)	(.092, .106)	(.0015, .0039)

SAMPLE TEMPERATURE 11.0 C INCUBATION TEMPERATURE 15.5 C

CHLOROPHYLL :	.82	RNA :	11.46	PHOSPHATE :	.17
CARBON :	114	DNA :	8.85	NITRATE :	.00
NITROGEN :	16	ATP :	.43	SILICATE :	2.33
		PROTEIN:	98.90	AMMONIA :	6.05

LOUIS SAINT LAURENT

LAT 49 31.5'N
DATE 13/07/79

LONG 58 34.6'W

STATION NO. 2
DEPTH 10 M

I	P	I	P	I	P	I	P
690	5.27	644	6.21	598	7.88	583	8.06
583	7.38	552	7.54	444	9.01	414	10.44
414	11.36	383	9.19	294	11.80	282	11.00
282	10.70	233	12.04	187	11.77	177	11.09
176	11.83	125	12.11	125	9.54	113	9.63
95	10.05	79	6.54	70	6.67	67	9.73
54	3.97	52	7.13	50	4.05	44	6.76
42	2.25	35	2.26	33	4.93	30	1.06
28	4.66	24	1.45	22	.67	20	3.36
17	2.87	15	.60	14	1.96	10	1.72
9	1.33	7	1.09	5	.47	4	.23
3	.28	2	.19	2	.05	2	.00

PARAMETER VALUES

PM : 12.84

(11.59, 14.08)

ALPHA : .149

(.112, .185)

SAMPLE TEMPERATURE 11.0 C

INCUBATION TEMPERATURE 15.5 C

CHLOROPHYLL	: .23	RNA	: 5.11	PHOSPHATE	: .14
CARBON	: 102	DNA	: 4.82	NITRATE	: .23
NITROGEN	: 10	ATP	: .23	SILICATE	: .64
		PROTEIN	: 98.90	AMMONIA	: 1.71

LOUIS SAINT LAURENT

LAT 52 56.0'N LONG 55 08.0'W STATION NO. 3
DATE 14/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
521	11.61	506	11.09	460	10.89	460	11.30
444	10.04	437	10.45	398	10.32	383	10.24
368	11.41	352	9.64	314	9.68	279	10.49
263	10.89	260	9.73	211	10.45	205	10.74
187	10.87	187	9.40	150	9.67	144	10.15
125	9.91	125	8.85	107	8.05	101	8.47
95	6.80	84	7.33	79	6.95	65	5.82
55	5.25	53	5.38	46	4.73	41	4.15
39	3.39	38	3.60	33	2.21	30	2.53
30	2.19	29	2.99	24	1.75	23	2.00
21	1.54	20	1.60	19	1.48	14	.73
14	.83	9	.35	8	.30	7	.22
7	.14						

PARAMETER VALUES

PS : 13.30 (11.45, 15.16)

ALPHA : .119 (.113, .126)

BETA : .0059 (.0010, .0107)

SAMPLE TEMPERATURE 6.5 C

INCUBATION TEMPERATURE 9.0 C

CHLOROPHYLL : .14

CARBON : 33

NITROGEN : 6

RNA : 4.20

DNA : 2.68

ATP : .09

PROTEIN: 50.20

PHOSPHATE : .19

NITRATE : .04

SILICATE : .98

AMMONIA : .24

LOUIS SAINT LAURENT

LAT 57 20.0'N LONG 55 24.0'W STATION NO. 4
DATE 15/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
767	1.20	751	1.25	690	1.10	690	1.94
659	2.81	613	3.24	590	3.43	583	2.55
498	3.01	498	2.82	490	3.58	383	2.83
368	3.25	337	3.41	337	2.70	239	3.39
224	2.80	199	3.43	150	2.67	125	3.16
104	2.57	98	2.35	96	2.33	85	1.95
72	1.76	70	1.87	69	1.49	59	1.45
50	.86	49	1.25	48	1.30	44	.78
38	.52	35	.43	34	.97	33	.84
30	.25	27	.24	25	.50	23	.52
18	.11	16	.07	12	.03	12	.01
8	.01	5	.01	3	.00	3	.00
2	.01	2	.00	1	.00	1	.02

PARAMETER VALUES

PM : 3.47 ALPHA : .033

(3.28, 3.66) (.027, .039)

SAMPLE TEMPERATURE 8.5 C INCUBATION TEMPERATURE 11.0 C

CHLOROPHYLL	: 2.60	RNA	: 30.49	PHOSPHATE	: .89
CARBON	: 150	DNA	: 17.85	NITRATE	: .62
NITROGEN	: 30	ATP	: .90	SILICATE	: 1.35
		PROTEIN	: 94.20	AMMONIA	: .86

LOUIS SAINT LAURENT

LAT 61 55.0'N LONG 55 51.0'W STATION NO. 5
DATE 16/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
797	2.12	782	1.99	736	1.78	721	2.09
675	2.52	644	2.13	631	2.32	613	2.43
506	2.48	466	2.27	460	2.02	398	2.54
383	2.30	352	2.33	352	2.18	276	2.51
248	2.05	236	2.27	236	2.10	199	1.98
184	2.22	177	2.44	138	1.70	135	2.28
128	2.11	122	1.86	101	1.80	92	1.69
85	1.51	73	1.23	67	1.22	62	1.72
56	.85	55	1.27	46	.69	39	.45
38	.96	36	1.01	35	.51	23	.76
23	.48	22	.25	21	.21	16	.37
16	.29	15	.09	10	.04	10	.06
7	.08	7	.00	4	.00		

PARAMETER VALUES

PS : 2.89	ALPHA : .026	BETA : .0012
(2.59, 3.19)	(.024, .027)	(.0006, .0019)

SAMPLE TEMPERATURE 7.5 C INCUBATION TEMPERATURE 10.0 C

CHLOROPHYLL : 1.26	RNA : 12.43	PHOSPHATE : .07
CARBON : 138	DNA : 12.82	NITRATE : .00
NITROGEN : 18	ATP : .67	SILICATE : 2.68
	PROTEIN: 86.20	AMMONIA : .76

LOUIS SAINT LAURENT

LAT 66 21.0'N
DATE 17/07/79

LONG 56 31.0'W

STATION NO. 6
DEPTH 10 M

I	P	I	P	I	P	I	P
650	3.08	629	3.23	629	2.92	521	2.69
506	3.04	506	3.18	490	3.34	368	3.11
368	2.82	352	3.40	352	3.04	276	3.18
239	3.18	233	3.33	220	3.21	211	2.76
168	3.14	153	2.70	142	2.79	141	2.55
125	2.62	96	2.93	95	2.22	92	2.87
85	2.40	65	1.78	65	2.46	62	1.53
57	2.33	46	1.32	46	1.07	41	2.00
35	1.91	34	.79	33	.67	28	1.55
22	.38	21	.29	21	1.22	19	1.03
16	.76	16	.16	14	.19	10	.08
10	.11	7	.05	7	.05	4	.02
4	.01	3	.01	3	.01	2	.02
2	.02	1	.01	1	.01		

PARAMETER VALUES

PS :	3.49	ALPHA :	.045	BETA :	.0008
(3.15,	3.83)	(.041,	.048)	(0.0000,	.0017)

SAMPLE TEMPERATURE 7.0 C

INCUBATION TEMPERATURE 6.5 C

CHLOROPHYLL :	1.89	RNA :	11.70	PHOSPHATE :	.12
CARBON :	86	DNA :	5.37	NITRATE :	.55
NITROGEN :	14	ATP :	.49	SILICATE :	2.30
		PROTEIN:	82.10	AMMONIA :	1.44

LOUIS SAINT LAURENT

LAT 70 49.7'N LONG 57 23.4'W STATION NO. 7
DATE 18/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
667	3.59	629	3.93	598	3.75	460	3.81
452	3.81	398	4.20	368	4.34	297	3.85
288	3.88	224	4.01	224	4.69	199	3.74
162	3.62	162	4.50	141	3.75	113	3.47
110	3.84	107	3.30	76	3.25	70	4.03
62	2.76	55	3.17	52	2.47	46	1.85
41	1.41	41	3.72	32	.77	32	2.23
30	1.04	26	1.92	23	.44	22	1.11
21	.61	17	.96	15	.59	15	.19
13	.21	12	.53	11	.14	10	.35
9	.04	8	.29	8	.04	7	.05
5	.03						

PARAMETER VALUES

PS : 5.03	ALPHA : .063	BETA : .0025
(4.37, 5.69)	(.057, .069)	(.0007, .0043)

SAMPLE TEMPERATURE 5.5 C INCUBATION TEMPERATURE 6.5 C

CHLOROPHYLL :	.36	RNA :	4.78	PHOSPHATE :	.03
CARBON :	59	DNA :	6.22	NITRATE :	.00
NITROGEN :	12	ATP :	.19	SILICATE :	2.16
		PROTEIN:	-	AMMONIA :	1.84

LOUIS SAINT LAURENT

LAT 74 35.7'N LONG 63 53.8'W STATION NO. 8
DATE 19/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
813	1.82	797	1.27	781	1.13	721	2.09
659	4.74	629	4.70	629	4.27	613	4.10
490	4.43	475	4.94	460	4.61	444	4.40
368	4.30	337	4.43	306	4.72	306	4.16
257	4.35	230	4.08	211	4.08	196	4.35
174	3.71	156	3.65	141	4.06	125	3.84
116	2.84	104	2.62	90	2.69	88	2.05
85	2.73	84	1.63	62	1.25	58	.94
56	1.86	49	1.65	47	.71	41	.39
35	1.11	33	.36	32	1.01	30	.21
22	.52	20	.51	12	.17	11	.25
6	.07	4	.06				

PARAMETER VALUES

PM : 5.00

(4.73, 5.27)

ALPHA : .036

(.030, .042)

SAMPLE TEMPERATURE -.5 C

INCUBATION TEMPERATURE 11.5 C

CHLOROPHYLL	: .35	RNA	: 7.17	PHOSPHATE	: .29
CARBON	: 85	DNA	: 6.04	NITRATE	: 1.38
NITROGEN	: 12	ATP	: .52	SILICATE	: 4.26
		PROTEIN	: 185.60	AMMONIA	: .21

LOUIS SAINT LAURENT

LAT 74 34.4'N LONG 76 49.0'W STATION NO. 9
DATE 20/07/79 DEPTH 10 M

I	P	I	P	I	P	I	P
460	2.62	398	1.63	398	2.41	337	1.92
285	2.25	276	2.49	276	2.11	224	1.98
190	2.70	174	2.85	165	2.58	156	2.07
141	2.36	122	2.11	104	2.29	101	2.34
98	2.69	88	2.80	73	2.64	65	2.67
64	2.15	58	2.34	49	2.26	47	2.68
39	1.92	38	2.93	36	2.63	36	1.92
24	1.35	24	2.83	23	1.36	23	2.01
16	.14	16	.82	16	.84	12	.07
11	.08	11	.53	11	.57	9	.05

PARAMETER VALUES

PS :	ALPHA :	BETA :
2.91	.092	.0024
(2.55, 3.27)	(.078, .105)	(.0007, .0041)

SAMPLE TEMPERATURE 4.0 C INCUBATION TEMPERATURE 5.5 C

CHLOROPHYLL :	1.00	RNA :	12.53	PHOSPHATE :	.14
CARBON :	123	DNA :	11.84	NITRATE :	.00
NITROGEN :	21	ATP :	.35	SILICATE :	2.47
		PROTEIN:	149.40	AMMONIA :	1.46

LOUIS SAINT LAURENT

LAT 73 45.3'N LONG 83 55.8'W STATION NO. 10
DATE 21/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
782	.30	782	.30	736	.30	736	.36
659	.38	644	.34	629	.40	613	.36
490	.43	475	.39	475	.41	444	.40
345	.35	337	.35	306	.41	233	.34
193	.44	181	.36	167	.31	125	.34
122	.41	118	.51	110	.31	95	.47
79	.44	76	.35	75	.41	73	.25
58	.29	53	.27	49	.34	49	.38
44	.19	41	.18	30	.15	29	.24
29	.23	29	.32	19	.23	19	.13
19	.20	14	.07	13	.13	12	.07
11	.13	9	.06	7	.09	5	.02
4	.01	3	.02	3	.01	2	.01
2	.02	2	.00	1	.01	1	.01

PARAMETER VALUES

PS :	ALPHA :	BETA :
.43	.010	.0001
(.40, .46)	(.009, .011)	(.0001, .0002)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	1.89	RNA :	5.31	PHOSPHATE :	1.22
CARBON :	111	DNA :	4.62	NITRATE :	6.04
NITROGEN :	14	ATP :	.10	SILICATE :	21.18
		PROTEIN:	103.60	AMMONIA :	2.49

LOUIS SAINT LAURENT

LAT 73 38.3'N LONG 83 54.8'W STATION NO. 11
DATE 22/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
782	1.77	782	1.15	736	1.61	721	1.59
644	2.27	644	2.41	598	1.52	498	3.00
490	2.24	414	2.56	355	2.16	352	2.74
322	3.12	296	2.78	251	2.61	220	3.06
174	3.24	145	3.37	141	2.82	119	2.90
99	2.54	85	2.97	81	2.57	78	2.66
70	2.50	61	2.95	47	2.16	47	1.96
47	2.27	46	2.35	38	2.09	35	1.76
30	2.37	28	1.92	27	1.01	26	1.24
19	.73	17	1.43	16	.57	13	1.25
12	.46	11	1.05	11	.51	9	.22
8	.88	8	.25	7	.72	6	.18
4	.19	3	.04	2	.06	2	.10
1	.00						

PARAMETER VALUES

PS : 3.88 ALPHA : .073 BETA : .0042

(3.59, 4.16) (.067, .078) (.0032, .0051)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 2.5 C

CHLOROPHYLL :	1.58	RNA :	1.65	PHOSPHATE :	1.09
CARBON :	95	DNA :	3.81	NITRATE :	5.95
NITROGEN :	13	ATP :	.55	SILICATE :	19.05
		PROTEIN:	86.20	AMMONIA :	1.37

LOUIS SAINT LAURENT

LAT 73 38.3'N LONG 83 53.8'W STATION NO. 12
DATE 22/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
782	.20	782	.79	736	.23	721	1.12
644	.63	644	1.66	629	1.46	598	.69
498	1.13	490	.87	355	1.91	352	1.42
322	1.46	251	2.50	220	1.86	174	1.99
141	2.61	136	2.13	119	2.44	99	2.69
85	2.49	81	2.16	78	2.11	70	2.78
61	2.33	47	2.47	47	2.02	46	2.14
38	2.08	35	2.54	30	1.64	28	1.64
27	1.83	26	1.81	20	1.19	18	1.28
17	1.12	16	1.04	13	.54	12	.18
11	.67	11	.19	8	.39	8	.09
7	.38	6	.03	4	.10	3	.00
2	.00						

PARAMETER VALUES

PS :	ALPHA :	BETA :
3.44	.081	.0074
(3.10, 3.77)	(.073, .088)	(.0057, .0090)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL :	1.26	RNA :	14.76	PHOSPHATE :	1.08
CARBON :	305	DNA :	9.10	NITRATE :	2.00
NITROGEN :	28	ATP :	.34	SILICATE :	10.66
		PROTEIN:	180.80	AMMONIA :	4.93

LOUIS SAINT LAURENT

LAT 73 37.0'N LONG 83 55.3'W STATION NO. 13
DATE 23/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
782	.30	767	.48	721	.42	721	.49
659	.74	644	.77	629	.78	613	.94
490	1.43	475	1.32	444	1.49	429	1.78
368	1.75	322	1.74	300	1.87	266	1.74
208	2.20	168	1.74	162	1.73	159	1.65
144	1.61	116	2.00	110	1.73	101	2.14
95	1.72	81	1.70	73	1.93	64	1.41
62	1.23	59	1.43	56	1.58	42	1.17
41	1.04	39	1.61	32	.77	30	.46
26	1.48	21	.44	19	.88	17	.74
16	.78	14	.25	14	.56	12	.36
11	.58	9	.15	8	.19	7	.11
6	.14	4	.01	3	.03	2	.02
2	.01	1	.02	1	.00	1	.02
0	.01						

PARAMETER VALUES

PS : 3.84 ALPHA : .036 BETA : .0092

(3.15, 4.53) (.033, .038) (.0062, .0123)

SAMPLE TEMPERATURE -1.5 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL	4.17	RNA	19.20	PHOSPHATE	.95
CARBON	169	DNA	7.29	NITRATE	1.24
NITROGEN	25	ATP	.76	SILICATE	11.00
		PROTEIN	185.60	AMMONIA	.05

LOUIS SAINT LAURENT

LAT 73 33.5'N LONG 84 03.0'W STATION NO. 14
DATE 24/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
751	.04	736	.12	721	.12	705	.05
659	.09	629	.11	613	.07	552	.06
475	.17	414	.27	383	.23	352	.36
233	.35	211	.41	153	.44	145	.42
138	.43	135	.41	101	.41	98	.43
92	.52	82	.52	73	.37	70	.50
55	.39	52	.32	52	.53	39	.27
36	.26	35	.39	33	.53	30	.26
27	.25	24	.38	24	.34	18	.14
18	.35	16	.14	16	.26	11	.08
11	.08	7	.05	6	.05	5	.02
5	.02	3	.01	3	.01		

PARAMETER VALUES

PS :	ALPHA :	BETA :
.72	.015	.0021
(.62, .81)	(.014, .017)	(.0015, .0027)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL :	4.29	RNA :	14.31	PHOSPHATE :	1.21
CARBON :	409	DNA :	5.49	NITRATE :	4.57
NITROGEN :	51	ATP :	.47	SILICATE :	15.80
		PROTEIN:	113.70	AMMONIA :	.99

LOUIS SAINT LAURENT

LAT 73 29.0'N LONG 83 18.0'W STATION NO. 15
DATE 24/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
751	.15	751	.13	721	.21	690	.11
613	.15	613	.18	613	.14	598	.21
490	.24	460	.46	414	.37	368	.61
325	.62	316	.47	260	.59	251	.68
230	.72	181	.59	168	.73	147	.73
110	.60	107	.62	98	.76	92	.76
79	.69	75	.67	61	.81	56	.54
55	.68	53	.56	42	.42	41	.41
38	.65	33	.31	33	.71	27	.32
24	.48	22	.21	20	.68	17	.50
16	.21	15	.09	15	.52	11	.08
11	.36	10	.04	9	.33	8	.07
7	.03	6	.03	4	.00	4	.01
3	.01						

PARAMETER VALUES

PS : 1.20	ALPHA : .020	BETA : .0032
(1.00, 1.39)	(.018, .022)	(.0022, .0043)

SAMPLE TEMPERATURE -1.0 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL : 1.07	RNA : 8.99	PHOSPHATE : 1.07
CARBON : 204	DNA : 4.58	NITRATE : 5.49
NITROGEN : 20	ATP : .45	SILICATE : 18.28
	PROTEIN: 53.20	AMMONIA : 2.34

LOUIS SAINT LAURENT

LAT 73 28.2'N LONG 84 22.0'W STATION NO. 16
DATE 25/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
751	2.41	751	2.03	721	2.27	690	1.86
613	2.31	613	2.39	613	1.91	598	2.12
490	2.24	460	2.43	460	2.16	414	2.35
368	2.46	325	2.42	316	2.31	260	2.28
251	2.21	230	2.62	181	2.32	171	2.18
168	2.10	147	2.41	110	2.04	107	2.16
98	2.07	92	2.20	79	1.80	75	1.79
61	2.24	56	1.24	55	2.17	53	1.42
42	.88	41	.79	38	1.91	33	.56
33	2.15	27	.43	24	1.65	22	.16
20	1.52	17	.94	16	.16	15	.08
15	1.02	11	.10	11	.51	10	.05
9	.56	8	.05	7	.01	6	.02
4	.01	3	.00	3	.01	2	.00

PARAMETER VALUES

PS : 2.56	ALPHA : .045	BETA : .0006
(2.32, 2.80)	(.040, .050)	(.0001, .0012)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	.65	RNA :	18.48	PHOSPHATE :	.69
CARBON :	369	DNA :	10.06	NITRATE :	.00
NITROGEN :	29	ATP :	.79	SILICATE :	5.12
		PROTEIN:	150.80	AMMONIA :	2.39

LOUIS SAINT LAURENT

LAT 73 16.5'N LONG 85 16.0'W STATION NO. 17
DATE 28/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
813	.72	797	.77	751	.98	736	.72
690	.96	675	1.06	644	.94	629	.83
529	.94	506	.97	429	.91	414	.92
375	1.03	352	1.13	268	1.04	254	.96
217	1.07	181	1.08	179	.91	159	.92
122	.93	110	.98	104	.88	101	.87
84	.88	76	.69	75	.86	64	.63
62	.66	56	.57	50	.50	45	.77
41	.44	41	.82	38	.32	32	.25
31	.59	29	.20	27	.60	21	.10
20	.39	19	.09	19	.49	14	.03
14	.24	12	.20				

PARAMETER VALUES

PS	ALPHA	BETA
1.20	.017	.0006
(1.09, 1.32)	(.015, .018)	(.0003, .0008)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL	1.47	RNA	15.15	PHOSPHATE	.30
CARBON	278	DNA	5.52	NITRATE	.18
NITROGEN	29	ATP	.51	SILICATE	3.54
		PROTEIN	83.20	AMMONIA	1.96

LOUIS SAINT LAURENT

LAT 73 04.4'N LONG 84 26.2'W STATION NO. 18
DATE 29/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
813	.75	813	.91	751	1.11	751	1.02
690	2.64	675	3.25	644	3.37	629	3.30
543	4.19	521	3.90	506	3.40	490	4.04
398	3.81	352	3.43	352	3.56	299	3.91
263	3.50	196	3.64	181	3.40	168	3.43
147	3.24	122	3.60	122	3.56	119	3.10
95	3.22	82	2.39	76	3.45	75	3.29
70	2.53	61	1.85	50	3.30	49	1.72
48	2.57	46	1.00	36	.97	32	.39
32	2.66	29	1.72	29	.58	22	1.96
20	1.02	19	.14	18	.10	15	.75
14	.01	14	.04	13	1.17	9	.69

PARAMETER VALUES

PM : 3.89 ALPHA : .061

(3.39, 4.38) (.037, .086)

SAMPLE TEMPERATURE 1.5 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL	: .50	RNA	: 6.10	PHOSPHATE	: .13
CARBON	: 151	DNA	: 5.12	NITRATE	: .00
NITROGEN	: 20	ATP	: -	SILICATE	: 8.76
		PROTEIN	: 53.00	AMMONIA	: 2.43

LOUIS SAINT LAURENT

LAT 73 41.5'N LONG 83 36.0'W STATION NO. 19
DATE 30/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
843	2.38	843	2.24	797	1.98	782	2.24
721	2.19	681	1.97	675	2.36	662	2.60
521	2.17	506	2.32	498	2.22	490	1.89
368	2.23	352	2.27	270	2.05	240	2.10
230	2.47	156	1.92	156	1.85	147	2.06
141	2.06	118	1.74	107	1.94	90	1.89
87	2.10	85	1.51	81	1.44	63	1.29
58	1.25	55	2.21	54	1.85	49	.80
46	.86	38	1.65	35	.47	35	.47
35	1.60	24	1.22	23	.31	23	1.19
21	.23	16	.14	16	.85	16	.87
15	.14	11	.06	11	.08	10	.47
10	.42						

PARAMETER VALUES

PS :	2.21	ALPHA :	.038	BETA :	.0000
(2.01,	2.42)	(.034,	.042)	(-.0004,	.0004)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 2.5 C

CHLOROPHYLL :	.25	RNA :	6.92	PHOSPHATE :	.32
CARBON :	141	DNA :	2.13	NITRATE :	.00
NITROGEN :	16	ATP :	.13	SILICATE :	3.60
		PROTEIN:	62.90	AMMONIA :	1.21

LOUIS SAINT LAURENT

LAT 73 41.5'N LONG 83 36.0'W STATION NO. 20
DATE 31/07/79 DEPTH 0 M

I	P	I	P	I	P	I	P
788	.24	782	.21	736	.25	662	.23
659	.26	644	.21	629	.24	536	.18
506	.25	475	.17	452	.26	337	.23
332	.22	279	.29	254	.25	251	.18
184	.20	171	.28	171	.23	138	.28
128	.18	118	.27	113	.20	91	.18
81	.17	79	.31	75	.22	64	.15
60	.16	50	.24	47	.14	47	.12
43	.10	35	.07	34	.21	31	.16
30	.07	26	.02	23	.15	22	.03
20	.11	17	.03	11	.01	11	.12
10	.08	10	.01	8	.00		

PARAMETER VALUES

PS :	.25	ALPHA :	.005	BETA :	.0000
(.22,	.28)	(.004,	.006)	(0.0000,	.0001)

SAMPLE TEMPERATURE 3.0 C INCUBATION TEMPERATURE 2.5 C

CHLOROPHYLL :	.54	RNA :	-	PHOSPHATE :	3.26
CARBON :	315	DNA :	-	NITRATE :	2.22
NITROGEN :	24	ATP :	.08	SILICATE :	9.12
		PROTEIN:	208.90	AMMONIA :	-

LOUIS SAINT LAURENT

LAT 73 43.4'N LONG 83 42.2'W STATION NO. 21
DATE 1/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
736	1.93	659	1.90	629	1.89	613	2.23
598	2.04	500	2.13	490	2.07	414	1.74
414	1.68	383	1.98	368	2.03	294	1.66
282	1.68	276	1.98	245	1.82	191	1.70
190	1.91	171	2.26	144	2.03	125	1.73
118	1.83	88	1.76	84	1.53	81	1.99
72	1.79	59	1.25	55	1.59	47	1.97
43	1.47	42	.82	42	1.19	34	.94
32	.56	32	1.47	27	1.11	26	.60
23	1.15	20	.33	19	.90	18	.27
16	.90	15	.16	12	.16	12	.44
11	.55	10	.09	9	.10	7	.06
6	.07	4	.02	4	.03	3	.04
2	.02	2	.03	2	.02	1	.03
1	.03						

PARAMETER VALUES

PS : 1.96	ALPHA : .044	BETA : .0000
(1.82, 2.10)	(.039, .048)	(-.0003, .0003)

SAMPLE TEMPERATURE -1.0 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL :	1.45	RNA :	17.95	PHOSPHATE :	.62
CARBON :	232	DNA :	6.37	NITRATE :	.21
NITROGEN :	25	ATP :	.58	SILICATE :	8.30
		PROTEIN:	112.50	AMMONIA :	.99

LOUIS SAINT LAURENT

LAT 73 36.0'N LONG 83 54.0'W STATION NO. 22
DATE 2/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
644	2.44	632	2.40	632	2.48	506	2.20
432	2.52	414	2.48	368	2.17	282	2.24
239	2.08	236	2.45	220	2.26	200	2.27
168	2.56	165	2.53	151	2.51	120	2.11
116	2.03	90	2.02	88	1.75	81	2.29
78	1.76	62	1.51	57	1.19	55	2.16
50	2.12	48	1.09	46	1.01	36	.66
36	1.80	33	.70	29	1.72	24	.30
23	1.24	22	.26	19	1.16	16	.17
16	.17	14	.81	13	.75	11	.09
11	.10	9	.51	8	.56	8	.03
7	.03	5	.01	4	.02	3	.01
2	.01	1	.02	1	.02		

PARAMETER VALUES

PS :	ALPHA :	BETA :
2.48	.043	.0002
(2.22, 2.73)	(.038, .047)	(-.0004, .0008)

SAMPLE TEMPERATURE -.6 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	1.18	RNA :	13.35	PHOSPHATE :	.48
CARBON :	146	DNA :	6.68	NITRATE :	.00
NITROGEN :	23	ATP :	.66	SILICATE :	7.73
		PROTEIN:	144.00	AMMONIA :	1.00

LOUIS SAINT LAURENT

LAT 73 43.0'N LONG 83 32.0'W STATION NO. 23
DATE 3/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
696	2.47	647	2.35	629	2.59	607	2.30
604	2.37	466	2.31	444	2.42	398	2.57
368	2.10	334	2.47	270	2.42	228	2.28
196	2.12	159	2.51	153	2.22	141	2.01
116	2.30	107	1.86	101	2.16	88	2.32
86	2.03	74	1.73	65	2.01	63	1.34
55	1.28	52	1.85	46	1.15	40	1.78
39	.60	34	.64	32	1.62	28	.41
25	.38	21	1.34	20	1.23	19	.16
16	.22	15	1.30	12	.01	11	.70
9	.72	9	.03	7	.79	6	.93

PARAMETER VALUES

PS : 2.40	ALPHA : .044	BETA : .0000
(2.13, 2.66)	(.039, .050)	(-.0006, .0006)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL : .32	RNA : 10.22	PHOSPHATE : .38
CARBON : 151	DNA : 5.10	NITRATE : .00
NITROGEN : 19	ATP : .29	SILICATE : 5.63
	PROTEIN: 134.60	AMMONIA : 3.64

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 26.9'W STATION NO. 24
DATE 4/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
613	1.69	589	1.60	583	1.69	475	1.67
444	1.61	386	1.66	386	1.54	337	1.67
276	1.40	274	1.58	230	1.78	224	1.39
177	1.44	165	1.46	156	1.54	141	1.41
122	1.32	102	1.29	95	1.29	85	.92
85	1.33	72	.90	61	.58	54	.56
54	1.08	52	1.21	41	.35	34	.84
33	.18	33	.93	30	.18	22	.61
22	.55	20	.03	20	.04	15	.30
14	.29	14	.01	13	.04	10	.17
10	.01	10	.00	9	.21	7	.00
3	.01	2	.01	2	.01	1	.00

PARAMETER VALUES

PS : 1.76 ALPHA : .019 BETA : .0002

(1.48, 2.04) (.017, .021) (-.0004, .0009)

SAMPLE TEMPERATURE 1.5 C INCUBATION TEMPERATURE 3.8 C

CHLOROPHYLL :	2.16	RNA :	32.04	PHOSPHATE :	.81
CARBON :	125	DNA :	6.55	NITRATE :	.51
NITROGEN :	20	ATP :	.35	SILICATE :	3.82
		PROTEIN:	205.40	AMMONIA :	7.28

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 26.9'W STATION NO. 25
DATE 5/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
779	3.74	776	3.30	730	2.72	721	4.15
647	3.77	644	4.26	601	3.85	598	3.22
506	3.63	497	3.80	417	3.55	414	3.01
371	3.91	352	3.67	271	3.29	266	3.14
240	3.22	217	3.00	181	2.99	162	2.80
159	2.49	150	2.65	130	2.49	119	2.53
92	2.66	92	2.92	87	1.47	86	1.74
62	1.03	62	1.10	60	2.04	59	2.40
46	.69	46	.60	38	1.61	36	1.53
34	.32	32	.32	23	.86	23	.05
22	.09	22	1.01	15	.01	15	.02
14	.47	14	.40	9	.19	9	.20

PARAMETER VALUES

PS : 4.01 ALPHA : .030 BETA : .0006

(3.28, 4.75) (.027, .034) (-.0007, .0018)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 5.2 C

CHLOROPHYLL	1.55	RNA	2.60	PHOSPHATE	.09
CARBON	92	DNA	.18	NITRATE	.55
NITROGEN	19	ATP	.10	SILICATE	3.32
		PROTEIN	83.70	AMMONIA	3.20

LOUIS SAINT LAURENT

LAT 74 32.1'N LONG 80 04.1'W STATION NO. 26
DATE 6/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
767	1.57	721	1.33	644	1.51	613	1.53
405	1.55	398	1.52	282	1.57	273	1.59
236	1.50	211	1.53	138	1.60	138	1.50
101	1.42	99	1.42	89	1.46	82	1.51
70	1.43	70	1.62	53	1.56	52	1.46
52	1.41	48	1.26	38	1.62	33	1.52
32	1.15	24	1.47	24	1.55	22	.84
20	.93	15	1.41	15	1.38	13	.67
13	.56	10	.00	9	1.10	6	.03
4	.00						

PARAMETER VALUES

PS	ALPHA	BETA
1.55	.090	.0001
(1.46, 1.65)	(.077, .103)	(-.0002, .0004)

SAMPLE TEMPERATURE 3.0 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL	1.14	RNA	11.79	PHOSPHATE	.65
CARBON	177	DNA	6.89	NITRATE	.00
NITROGEN	25	ATP	.41	SILICATE	2.09
		PROTEIN	103.70	AMMONIA	.55

LOUIS SAINT LAURENT

LAT 74 36.1'N LONG 79 48.6'W STATION NO. 27
DATE 7/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
767	2.05	767	2.31	721	2.18	705	2.17
613	2.21	613	2.04	598	2.05	598	2.21
490	2.17	467	2.27	429	2.08	352	2.17
337	2.02	285	2.26	282	2.17	254	2.28
233	2.15	184	1.99	177	2.26	165	1.94
164	2.34	125	1.98	116	2.11	116	2.11
88	1.52	87	1.64	67	2.21	64	2.15
62	1.50	59	1.20	49	2.02	47	.93
46	.80	44	1.58	35	.47	33	1.47
32	.55	30	1.35	24	1.00	20	.21
20	.19	19	.73	14	.69	13	.09
13	.09	13	.60	9	.06	9	.02
6	.01	5	.01	3	.00		

PARAMETER VALUES

PS : 2.32	ALPHA : .039	BETA : .0003
(2.12, 2.51)	(.035, .043)	(-.0001, .0007)

SAMPLE TEMPERATURE 2.5 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL :	2.23	RNA :	14.67	PHOSPHATE :	.44
CARBON :	189	DNA :	6.59	NITRATE :	.00
NITROGEN :	23	ATP :	.77	SILICATE :	4.26
		PROTEIN:	92.60	AMMONIA :	.57

LOUIS SAINT LAURENT

LAT 75 35.7'N LONG 83 57.0'W STATION NO. 28
DATE 8/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
751	1.78	751	1.82	705	1.87	705	1.78
629	1.76	613	1.67	613	1.90	613	1.74
460	2.02	429	1.40	414	1.78	414	1.60
306	1.85	306	1.70	254	1.57	239	1.79
205	2.02	199	1.49	174	1.73	162	1.76
141	1.78	124	1.64	104	1.48	98	1.31
98	1.73	85	1.43	72	1.52	69	1.43
62	1.31	58	1.73	49	1.02	46	1.06
39	1.26	37	.71	36	1.34	30	.74
27	.97	26	.88	26	.45	24	.49
17	.22	17	.72	17	.59	16	.21
11	.10	11	.45	11	.35	10	.12
8	.07	7	.06	5	.04	5	.02
3	.01	2	.00	2	.01	1	.01

PARAMETER VALUES

PS :	ALPHA :	BETA :
1.78	.036	.0000
(1.68, 1.89)	(.033, .039)	(-.0002, .0002)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 2.5 C

CHLOROPHYLL :	1.12	RNA :	8.82	PHOSPHATE :	.64
CARBON :	73	DNA :	4.39	NITRATE :	3.89
NITROGEN :	21	ATP :	.36	SILICATE :	15.62
		PROTEIN:	81.60	AMMONIA :	.89

LOUIS SAINT LAURENT

LAT 73 19.6'N LONG 85 25.1'W STATION NO. 29
DATE 9/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
782	1.56	767	2.19	721	1.51	721	2.04
629	3.08	629	2.81	613	3.22	583	2.52
460	3.29	429	3.00	398	2.57	383	2.51
306	2.98	291	3.28	248	2.57	208	3.28
205	2.80	194	2.89	156	2.74	138	2.70
133	2.59	125	2.95	95	2.20	88	2.32
84	2.45	78	2.67	65	1.50	61	1.63
53	2.23	49	2.53	47	.99	46	1.14
35	.71	32	.71	32	1.70	29	1.76
24	.40	23	.35	20	1.19	19	1.17
15	.12	14	.19	13	.84	12	.64
10	.06	10	.05	8	.50	8	.34
7	.00	7	.00				

PARAMETER VALUES

PS :	4.11	ALPHA :	.042	BETA :	.0034
(3.50,	4.73)	(.038,	.046)	(.0018,	.0051)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL :	2.48	RNA :	15.49	PHOSPHATE :	.41
CARBON :	173	DNA :	5.67	NITRATE :	.00
NITROGEN :	28	ATP :	1.06	SILICATE :	8.97
		PROTEIN:	117.80	AMMONIA :	.63

LOUIS SAINT LAURENT

LAT 74 47.2'N LONG 79 01.4'W STATION NO. 30
DATE 10/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
629	1.62	613	1.73	598	1.60	589	1.34
460	1.36	429	1.52	398	1.25	368	1.35
352	1.66	306	1.62	257	1.67	251	1.20
234	1.34	217	1.53	165	1.48	159	1.41
141	1.40	107	1.21	104	1.24	101	1.24
96	1.34	75	.98	73	1.05	61	1.19
59	1.21	53	.80	52	.79	42	1.04
38	.70	38	.54	38	1.05	29	.38
27	.81	26	.46	26	.85	19	.13
18	.59	18	.17	18	.56	12	.08
12	.04	11	.38	11	.43	8	.04
8	.03	6	.14	5	.06	2	.04
2	.02	1	.01	1	.04		

PARAMETER VALUES

PS :	ALPHA :	BETA :
1.50	.027	.0000
(1.37, 1.62)	(.024, .029)	(-.0003, .0003)

SAMPLE TEMPERATURE 4.0 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	.23	RNA :	5.77	PHOSPHATE :	.14
CARBON :	72	DNA :	4.12	NITRATE :	.00
NITROGEN :	14	ATP :	.17	SILICATE :	1.84
		PROTEIN:	53.70	AMMONIA :	.57

LOUIS SAINT LAURENT

LAT 74 44.7'N LONG 79 04.0'W STATION NO. 31
DATE 11/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
782	3.04	751	2.68	705	3.05	705	2.57
629	2.61	613	2.17	598	2.67	475	2.61
444	2.55	383	2.29	322	2.59	322	2.60
276	2.21	236	2.59	224	2.39	224	2.08
162	2.50	153	2.37	150	2.74	141	2.37
116	2.07	107	2.12	101	2.20	92	2.12
81	1.71	70	2.18	67	1.95	59	2.36
53	1.17	49	1.29	42	2.05	38	.91
38	1.81	35	1.01	28	1.87	27	.66
26	1.40	25	.63	19	1.28	18	.20
18	1.08	15	.31	13	1.00	13	.80
12	.04	10	.03	7	.02		

PARAMETER VALUES

PS :	2.56	ALPHA :	.050	BETA :	.0000
(2.36,	2.76)	(.045,	.055)	(-.0004,	.0004)

SAMPLE TEMPERATURE 4.0 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL :	.20	RNA :	4.86	PHOSPHATE :	.26
CARBON :	80	DNA :	3.23	NITRATE :	.00
NITROGEN :	23	ATP :	.32	SILICATE :	2.16
		PROTEIN:	87.10	AMMONIA :	1.02

LOUIS SAINT LAURENT

LAT 74 47.5'N LONG 79 01.5'W STATION NO. 32
DATE 11/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
767	2.63	751	2.94	705	2.93	598	2.74
598	2.40	583	2.98	490	2.73	475	2.43
475	2.62	429	2.85	337	2.60	322	2.89
263	2.63	257	2.71	227	2.54	227	2.43
165	2.27	162	2.30	144	2.65	144	2.47
116	2.24	84	2.43	79	1.43	78	1.41
75	2.50	61	.91	56	.90	50	2.33
46	2.19	42	.57	42	.48	35	1.60
30	.27	30	.23	27	1.68	23	1.23
20	.05	20	.08	16	1.14	14	.02
14	.00	14	.54	10	.64	10	.01
7	.32	7	.33	5	.00		

PARAMETER VALUES

PS :	2.74	ALPHA :	.036	BETA :	.0000
(2.36,	3.13)	(.031,	.041)	(-.0007,	.0007)

SAMPLE TEMPERATURE 4.0 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL :	.46	RNA :	11.87	PHOSPHATE :	.28
CARBON :	113	DNA :	5.32	NITRATE :	.00
NITROGEN :	22	ATP :	.23	SILICATE :	2.81
		PROTEIN:	73.60	AMMONIA :	.68

LOUIS SAINT LAURENT

LAT 74 47.0'N LONG 79 01.1'W STATION NO. 33
DATE 12/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
751	1.95	736	1.73	690	1.80	598	.88
598	1.72	583	1.73	460	1.70	444	1.90
444	1.58	383	1.77	368	1.82	322	1.81
300	1.99	276	1.71	251	1.96	217	1.92
205	1.47	187	1.64	174	1.46	156	1.83
138	1.10	128	1.64	116	1.08	113	1.66
93	.76	90	1.39	88	.64	82	1.49
72	1.18	65	.58	62	.53	61	1.14
52	.94	47	.98	36	.58	35	.75
24	.29	23	.29	16	.20	15	.13
12	.04	11	.08	8	.00	8	.02

PARAMETER VALUES

PS :	2.02	ALPHA :	.019	BETA :	.0004
(1.73,	2.32)	(.017,	.021)	(-.0002,	.0010)

SAMPLE TEMPERATURE 3.8 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL :	.56	RNA :	7.42	PHOSPHATE :	.21
CARBON :	137	DNA :	5.67	NITRATE :	.00
NITROGEN :	14	ATP :	.43	SILICATE :	2.64
		PROTEIN:	63.50	AMMONIA :	2.33

LOUIS SAINT LAURENT

LAT 74 46.5'N
DATE 12/08/79

LONG 79 01.4'W

STATION NO. 34
DEPTH 10 M

I	P	I	P	I	P	I	P
736	2.97	675	2.98	675	3.09	598	2.85
567	2.95	567	2.88	552	2.64	460	2.83
444	2.71	414	2.44	352	2.84	352	2.58
306	2.90	251	2.67	251	2.85	239	2.99
211	2.54	171	2.43	162	2.65	156	2.52
141	2.74	122	2.25	113	2.41	104	2.31
95	2.36	82	1.78	81	1.89	64	2.44
61	1.26	61	2.32	59	1.33	46	.79
41	.93	41	2.16	39	2.07	29	.52
28	1.72	26	1.63	25	.48	19	.22
19	1.00	17	1.12	17	.18	12	.61
12	.06	12	.08	11	.60	8	.03
8	.05	5	.04	3	.02		

PARAMETER VALUES

PS : 2.83
(2.56, 3.09)

ALPHA : .044
(.040, .049)

BETA : .0000
(-.0005, .0005)

SAMPLE TEMPERATURE 4.0 C

INCUBATION TEMPERATURE 7.0 C

CHLOROPHYLL : .46
CARBON : 137
NITROGEN : 23

RNA : 4.45
DNA : 3.43
ATP : .67
PROTEIN: 60.70

PHOSPHATE : .22
NITRATE : .00
SILICATE : 2.64
AMMONIA : 1.03

LOUIS SAINT LAURENT

LAT 74 47.1'N LONG 79 00.9'W STATION NO. 35
DATE 12/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
751	1.52	736	1.30	690	1.44	629	1.20
613	1.51	583	1.40	567	1.26	460	1.52
444	1.25	398	1.18	368	1.14	306	1.37
300	1.40	254	1.14	230	1.31	230	1.22
208	1.30	159	1.14	153	1.19	144	1.26
138	1.23	107	1.06	104	1.20	101	1.09
88	1.14	76	.93	73	1.06	61	.96
59	1.04	56	.78	53	.90	42	.76
41	.65	39	.98	39	.88	31	.47
30	.44	29	.84	27	.78	20	.19
20	.46	19	.50	19	.21	13	.10
13	.40	13	.30	12	.09	10	.06
8	.04	7	.02	6	.04	4	.01

PARAMETER VALUES

PS : 1.32 (1.24, 1.40)

ALPHA : .025 (.023, .027)

BETA : .0000 (-.0002, .0002)

SAMPLE TEMPERATURE 4.0 C

INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL : .45

CARBON : 144

NITROGEN : 16

RNA : 7.25

DNA : 4.58

ATP : .44

PROTEIN: 64.30

PHOSPHATE : .16

NITRATE : .00

SILICATE : 2.20

AMMONIA : 2.93

LOUIS SAINT LAURENT

LAT 74 34.7'N LONG 79 46.0'W STATION NO. 36
DATE 14/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
721	1.10	721	1.19	675	.96	675	1.16
583	1.03	583	1.18	567	.90	536	1.20
414	1.21	414	.95	383	1.02	322	.93
297	1.12	294	1.03	239	.93	202	.91
190	.80	181	1.00	141	.97	138	1.06
131	.92	110	.93	101	.95	95	.96
86	.93	73	.77	72	.98	69	.81
55	.55	53	.84	53	.61	47	.92
41	.43	38	.40	37	.76	32	.79
29	.28	28	.27	25	.63	22	.68
21	.09	20	.06	17	.46	14	.44
14	.10	13	.07	11	.28	10	.27
9	.03	9	.03	6	.03	3	.01

PARAMETER VALUES

PS :	ALPHA :	BETA :
1.05	.021	.0000
(.96, 1.14)	(.019, .023)	(-.0002, .0002)

SAMPLE TEMPERATURE 3.8 C INCUBATION TEMPERATURE 7.0 C

CHLOROPHYLL :	.26	RNA :	5.77	PHOSPHATE :	.12
CARBON :	90	DNA :	4.39	NITRATE :	.00
NITROGEN :	24	ATP :	.25	SILICATE :	1.58
		PROTEIN:	60.70	AMMONIA :	.13

LOUIS SAINT LAURENT

LAT 74 41.6'N LONG 79 21.5'W STATION NO. 37
DATE 15/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
598	1.37	567	1.29	567	1.23	536	1.32
444	1.24	414	1.34	374	1.43	322	1.45
306	1.40	306	1.38	230	1.32	220	1.30
208	1.45	199	1.31	147	1.51	144	1.32
141	1.19	135	1.49	110	1.28	95	1.23
90	1.25	85	1.23	75	1.17	64	1.05
56	1.31	55	.89	50	1.24	47	.86
39	1.21	35	.65	33	1.12	32	.64
26	.70	25	.47	22	.39	22	.74
18	.21	16	.46	15	.21	14	.45
10	.29	10	.11	9	.30	8	.11
6	.06	6	.06	4	.04	4	.04
3	.01	2	.01	2	.00	2	.01
1	.01	1	.01	0	.00		

PARAMETER VALUES

PS : 1.50 ALPHA : .032 BETA : .0004

(1.41, 1.59) (.030, .034) (.0001, .0007)

SAMPLE TEMPERATURE 2.0 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL : 3.20 RNA : 18.96 PHOSPHATE : .34

CARBON : 145 DNA : 5.49 NITRATE : .12

NITROGEN : 34 ATP : .73 SILICATE : 5.12

PROTEIN: 99.20 AMMONIA : 9.59

LOUIS SAINT LAURENT

LAT 74 31.9'N LONG 82 27.3'W STATION NO. 38
DATE 17/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
368	1.08	337	1.20	297	1.18	266	1.06
230	1.11	227	1.07	205	1.32	193	1.06
156	1.03	147	1.14	130	1.09	128	1.22
116	1.09	95	1.05	88	1.20	84	1.26
82	.82	71	.79	58	1.03	55	1.05
55	.62	50	.60	41	.55	36	.49
36	.95	35	.82	32	.29	27	.29
23	.67	23	.68	19	.15	17	.46
16	.15	15	.47	12	.09	11	.09
10	.31	10	.34	8	.05	7	.05
6	.02	5	.02	3	.00	3	.01

PARAMETER VALUES

PS : 1.38 (1.08, 1.67)

ALPHA : .023 (.021, .026)

BETA : .0009 (-.0004, .0022)

SAMPLE TEMPERATURE 2.0 C

INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL : 10.96

CARBON : 179

NITROGEN : 36

RNA : 26.21

DNA : 5.65

ATP : 1.24

PROTEIN: 106.00

PHOSPHATE : .43

NITRATE : .10

SILICATE : 7.81

AMMONIA : 5.58

LOUIS SAINT LAURENT

LAT 74 31.9'N LONG 82 27.3'W STATION NO. 39
DATE 18/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
751	3.24	690	3.78	613	3.78	613	3.27
583	3.42	567	3.04	444	2.90	444	3.40
398	3.12	383	3.27	337	3.43	300	3.29
239	3.15	224	3.35	217	3.19	214	3.11
151	3.15	141	2.95	122	3.51	119	3.09
116	2.82	88	2.23	85	2.75	82	2.30
75	3.20	62	1.63	59	1.66	52	2.89
47	2.77	41	1.21	41	1.21	33	2.21
32	.70	30	2.27	28	.72	22	.37
19	1.59	19	.30	16	1.52	14	.19
14	.17	11	.88	10	.98	9	.09
9	.08	7	.51	7	.06	7	.49
6	.08	4	.02	4	.01	3	.00
2	.00	1	.00				

PARAMETER VALUES

PS : 3.35 (3.04, 3.66)

ALPHA : .057 (.051, .063)

BETA : .0000 (-.0007, .0007)

SAMPLE TEMPERATURE 2.0 C

INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL : 3.74

CARBON : 202

NITROGEN : 41

RNA : -

DNA : -

ATP : 1.14

PROTEIN: 147.40

PHOSPHATE : .23

NITRATE : .00

SILICATE : 3.77

AMMONIA : 2.26

LOUIS SAINT LAURENT

LAT 74 31.8'N LONG 82 27.6'W STATION NO. 40
DATE 19/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
629	1.25	629	1.17	613	1.11	613	1.24
475	1.28	444	1.29	414	1.10	383	1.07
383	1.23	337	1.20	285	1.13	248	1.20
245	1.08	245	1.13	208	1.06	171	1.24
159	1.12	144	1.11	141	1.11	125	1.08
98	1.04	92	1.00	90	1.01	82	1.05
67	.74	61	.80	61	1.12	53	.91
49	.50	44	.55	38	.91	33	.35
32	.36	31	.93	25	.80	21	.17
20	.17	20	.74	15	.11	15	.58
14	.44	13	.11	11	.07	9	.46
8	.07	8	.39	8	.04	6	.04
5	.02	3	.02	3	.01	2	.02
2	.01	2	.01	1	.02	1	.02

PARAMETER VALUES

PS	ALPHA	BETA
1.18	.025	.0000
(1.08, 1.28)	(.022, .027)	(-.0002, .0002)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL	5.29	RNA	19.12	PHOSPHATE	.46
CARBON	216	DNA	5.37	NITRATE	.00
NITROGEN	21	ATP	1.26	SILICATE	2.76
		PROTEIN	144.60	AMMONIA	2.22

LOUIS SAINT LAURENT

LAT 74 31.8'N LONG 82 27.6'W STATION NO. 41
DATE 20/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
776	.54	767	.34	721	.36	718	.46
613	.66	607	.76	598	.59	494	.66
475	.69	444	.61	429	.59	349	.80
322	.70	322	.64	291	.65	250	.63
217	.60	202	.61	190	.69	176	.64
156	.69	135	.62	128	.61	122	.73
116	.72	95	.63	85	.70	83	.60
63	.47	62	.56	61	.54	55	.53
42	.39	40	.37	39	.28	39	.49
30	.29	27	.26	26	.50	24	.31
18	.13	17	.14	16	.20	16	.22
12	.07	11	.07	8	.05	8	.05
6	.03	5	.03	3	.01	3	.02
2	.01	2	.01	1	.01	1	.01
1	.01	1	.01				

PARAMETER VALUES

PS :	ALPHA :	BETA :
.83	.014	.0005
(.77, .88)	(.013, .015)	(.0004, .0007)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL :	4.74	RNA :	20.52	PHOSPHATE :	.33
CARBON :	173	DNA :	5.12	NITRATE :	.00
NITROGEN :	22	ATP :	1.00	SILICATE :	2.51
		PROTEIN:	232.60	AMMONIA :	-

LOUIS SAINT LAURENT

LAT 74 31.8'N LONG 82 27.6'W STATION NO. 42
DATE 21/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
644	3.25	613	3.28	613	3.26	552	3.05
460	3.46	444	3.44	398	3.11	383	3.44
368	3.38	322	3.34	270	3.02	245	3.08
225	3.43	220	3.18	174	3.07	156	3.32
147	3.22	125	3.37	119	3.33	92	3.01
84	3.41	79	3.21	78	2.88	67	2.91
56	2.33	50	3.12	47	2.58	44	3.07
42	1.84	36	1.86	30	1.22	30	2.85
28	2.83	27	1.29	19	2.18	19	2.06
18	.72	17	.73	13	1.32	13	1.46
12	.42	11	.40	9	.92	8	.20
8	.89	8	.23	5	.12	5	.11
3	.02	3	.02				

PARAMETER VALUES

PS :	3.40	ALPHA :	.095	BETA :	.0003
(3.18,	3.62)	(.087,	.104)	(-.0003,	.0009)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 4.2 C

CHLOROPHYLL :	2.69	RNA :	14.34	PHOSPHATE :	.20
CARBON :	220	DNA :	5.55	NITRATE :	.00
NITROGEN :	27	ATP :	.86	SILICATE :	1.91
		PROTEIN:	184.70	AMMONIA :	.40

LOUIS SAINT LAURENT

LAT 74 31.8'N LONG 82 27.6'W STATION NO. 43
DATE 22/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
774	1.14	767	1.30	721	1.25	705	1.79
621	1.91	613	1.67	598	1.63	598	1.50
460	1.94	444	2.02	406	1.71	368	1.80
337	1.94	325	2.01	273	1.75	220	2.15
220	1.82	217	1.93	177	1.75	156	1.99
144	1.87	135	2.02	105	1.91	101	1.76
95	1.81	82	1.80	78	1.81	72	1.64
61	1.94	55	1.83	52	1.58	49	1.41
41	1.38	39	1.79	36	1.71	35	1.18
29	.81	27	1.60	25	1.00	25	1.54
19	.43	18	.44	18	1.18	16	1.21
12	.25	12	.72	12	.28	11	.52
8	.14	8	.14	6	.07	6	.09
4	.04	3	.03	2	.01	2	.01
1	.01						

PARAMETER VALUES

PS : 2.20	ALPHA : .057	BETA : .0011
(2.07, 2.33)	(.052, .062)	(.0008, .0015)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	6.66	RNA :	17.18	PHOSPHATE :	.28
CARBON :	221	DNA :	5.85	NITRATE :	.00
NITROGEN :	24	ATP :	1.29	SILICATE :	1.81
		PROTEIN:	136.10	AMMONIA :	.42

LOUIS SAINT LAURENT

LAT 74 31.8'N LONG 82 27.6'W STATION NO. 44
DATE 23/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
721	2.26	721	2.68	659	2.60	659	2.18
629	2.74	583	2.73	552	2.51	444	2.84
398	2.68	391	2.81	337	2.59	322	2.78
276	2.77	251	2.29	227	2.99	204	2.77
184	2.70	159	2.81	153	2.60	144	2.67
115	2.45	113	2.43	104	2.80	99	2.47
79	2.61	79	2.84	75	2.49	69	2.31
61	2.20	56	2.05	56	2.46	44	1.86
44	2.37	42	1.65	38	2.24	31	1.28
31	1.41	30	2.06	25	2.45	21	.90
21	.60	19	1.30	17	1.83	14	.47
13	1.32	13	.52	11	1.32	10	.26
9	.31	7	.16	6	.19	4	.05
4	.07	3	.03	2	.06	2	.00
1	.01	1	.01	1	.01		

PARAMETER VALUES

PS : 2.85 ALPHA : .078 BETA : .0005

(2.70, 3.00) (.072, .085) (.0001, .0009)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL	: 3.66	RNA	: 14.26	PHOSPHATE	: .38
CARBON	: 210	DNA	: 5.34	NITRATE	: .00
NITROGEN	: 25	ATP	: .90	SILICATE	: 1.09
		PROTEIN	: 130.90	AMMONIA	: 1.57

LOUIS SAINT LAURENT

LAT 75 47.2'N LONG 80 20.0'W STATION NO. 45
DATE 24/08/79 DEPTH 10 M

I	P	I	P	I	P	I	P
736	1.22	736	1.08	583	1.21	583	1.02
552	.89	536	1.07	475	1.13	429	1.27
414	1.07	398	1.24	337	1.10	322	1.15
306	1.06	263	1.10	257	1.17	239	1.11
193	1.06	193	1.11	168	1.10	162	1.03
125	1.13	119	1.08	119	1.09	113	1.13
88	1.09	82	1.07	75	1.06	73	1.20
69	1.20	59	.91	50	1.01	49	.98
47	.77	42	.72	34	.96	33	.59
33	.50	33	.95	22	.27	22	.26
22	.71	21	.68	15	.15	14	.51
14	.14	14	.42	10	.08	10	.09
7	.03	7	.04	5	.01	4	.01
3	.00	2	.01				

PARAMETER VALUES

PS :	1.19	ALPHA :	.030	BETA :	.0002
(1.12,	1.26)	(.028,	.033)	(0.0000,	.0003)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL :	3.79	RNA :	15.33	PHOSPHATE :	.27
CARBON :	205	DNA :	4.70	NITRATE :	.00
NITROGEN :	21	ATP :	.84	SILICATE :	2.20
		PROTEIN:	114.70	AMMONIA :	.26

LOUIS SAINT LAURENT

LAT 77 28.0'N LONG 89 21.4'W STATION NO. 46
DATE 25/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
736	.38	736	.28	690	.34	659	.34
613	.34	583	.58	567	.32	552	.48
444	.79	414	.78	383	.68	362	.72
306	.76	276	1.02	251	.76	242	.79
230	.81	202	1.01	181	.94	153	.98
153	.85	144	.89	110	.90	107	.91
93	1.03	87	.88	79	.73	73	.92
59	.83	55	.95	52	.70	38	.55
38	.36	38	.76	27	.38	27	.22
24	.74	21	.63	18	.19	18	.10
15	.51	14	.45	12	.06	12	.11
10	.39	8	.38	8	.02	8	.08
6	.06	5	.00	3	.02	3	.03
2	.04						

PARAMETER VALUES

PS :	1.43	ALPHA :	.022	BETA :	.0028
(1.26,	1.61)	(.020,	.024)	(.0020,	.0036)

SAMPLE TEMPERATURE -1.5 C INCUBATION TEMPERATURE 2.0 C

CHLOROPHYLL :	.36	RNA :	2.96	PHOSPHATE :	.33
CARBON :	61	DNA :	.83	NITRATE :	.00
NITROGEN :	8	ATP :	.13	SILICATE :	6.79
		PROTEIN:	56.90	AMMONIA :	.84

LOUIS SAINT LAURENT

LAT 77 33.5'N LONG 89 19.0'W STATION NO. 47
DATE 26/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
736	.36	721	.28	675	.45	659	.36
583	.56	583	.40	567	.64	567	.38
460	.65	444	.73	398	.54	383	.57
322	.59	266	.82	251	.93	242	.55
199	.79	181	.59	156	.76	141	.64
131	.61	116	.87	88	.95	88	.95
82	.93	78	.68	65	.86	62	.87
55	.90	49	.75	47	.56	47	.65
36	.43	33	.46	33	.75	30	.89
26	.31	24	.33	22	.65	20	.63
17	.17	16	.20	13	.50	12	.56
11	.10	11	.14	8	.37	8	.35
8	.05	7	.08	6	.02	6	.03
4	.02	2	.01	1	.01	1	.00

PARAMETER VALUES

PS : .99 ALPHA : .029 BETA : .0013

(.90, 1.08) (.025, .032) (.0009, .0016)

SAMPLE TEMPERATURE -1.0 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL : 3.51 RNA : 6.76 PHOSPHATE : .86

CARBON : 96 DNA : 2.15 NITRATE : 2.12

NITROGEN : 15 ATP : .35 SILICATE : 12.61

PROTEIN: 80.00 AMMONIA : 1.54

LOUIS SAINT LAURENT

LAT 77 47.0'N LONG 89 32.0'W STATION NO. 48
DATE 27/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
721	3.35	705	3.39	659	3.70	659	3.51
567	2.99	567	3.52	567	3.19	552	2.92
444	3.41	429	3.81	383	3.44	360	3.17
322	3.47	294	3.65	257	3.35	234	3.56
227	3.22	211	3.66	162	3.52	159	3.61
138	3.44	122	3.42	95	2.99	92	3.05
90	3.34	81	2.89	67	2.27	65	3.11
59	2.84	56	2.73	47	1.72	44	1.50
44	1.72	39	2.19	35	1.03	33	1.04
29	1.55	26	1.73	25	.80	23	.74
20	1.27	19	1.17	15	.25	14	.34
13	.69	12	.70	11	.16	10	.17
7	.14	6	.08	5	.03	4	.08
2	.00	2	.01	1	.01		

PARAMETER VALUES

PS :	3.96	ALPHA :	.060	BETA :	.0011
(3.69,	4.22)	(.056,	.064)	(.0005,	.0017)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 5.5 C

CHLOROPHYLL :	.55	RNA :	2.72	PHOSPHATE :	.36
CARBON :	68	DNA :	1.92	NITRATE :	.00
NITROGEN :	9	ATP :	.20	SILICATE :	7.12
		PROTEIN:	46.80	AMMONIA :	.49

LOUIS SAINT LAURENT

LAT 79 58.6'N LONG 86 03.8'W STATION NO. 49
DATE 28/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
705	2.73	662	2.78	613	2.52	583	2.84
552	2.52	454	2.43	452	2.81	441	2.64
398	2.81	352	2.50	337	2.24	329	2.17
260	2.47	214	2.27	190	2.55	177	2.45
156	2.56	145	2.25	119	2.29	110	2.10
95	2.17	76	1.69	76	2.32	75	2.44
72	1.56	55	1.34	55	1.96	53	1.33
52	2.08	39	1.03	38	1.40	36	1.98
29	.60	26	.59	25	.85	23	1.47
20	.17	17	.54	16	.15	14	1.08
13	.04	11	.05	8	.08	7	.02
6	.01	4	.01				

PARAMETER VALUES

PS :	2.59	ALPHA :	.044	BETA :	.0000
(	2.34, 2.84)	(	.040, .049)	(	-.0005, .0005)

SAMPLE TEMPERATURE .2 C INCUBATION TEMPERATURE 8.0 C

CHLOROPHYLL :	.22	RNA :	2.72	PHOSPHATE :	.27
CARBON :	62	DNA :	.50	NITRATE :	.00
NITROGEN :	9	ATP :	.23	SILICATE :	7.62
		PROTEIN:	51.80	AMMONIA :	6.05

LOUTS SAINT LAURENT

LAT 78 51.0'N LONG 85 25.0'W STATION NO. 50
DATE 29/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
613	2.88	567	3.19	561	2.77	521	3.26
368	3.47	360	2.64	337	3.27	276	3.07
273	2.82	224	2.70	193	2.77	174	2.51
174	2.50	141	2.76	135	2.63	119	2.55
107	2.66	95	2.72	87	2.65	82	2.41
72	2.35	72	2.50	61	2.05	58	2.07
52	2.55	46	1.60	44	1.52	41	2.35
33	.96	32	1.03	32	2.54	27	.75
25	2.23	25	.59	21	1.82	17	2.01
15	.27	15	.16	13	1.33	11	.05
11	1.41	10	.03	8	.92	7	.07
7	.99	7	.01				

PARAMETER VALUES

PS :	2.92	ALPHA :	.068	BETA :	.0000
(2.62,	3.21)	(.059,	.077)	(-.0008,	.0008)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL :	.27	RNA :	.62	PHOSPHATE :	.65
CARBON :	68	DNA :	1.42	NITRATE :	.00
NITROGEN :	8	ATP :	.34	SILICATE :	7.00
		PROTEIN:	53.50	AMMONIA :	.71

LOUIS SAINT LAURENT

LAT 76 08.0'N LONG 85 57.0'W STATION NO. 51
DATE 30/08/79 DEPTH 0 M

I	P	I	P	I	P	I	P
736	2.15	675	2.53	659	2.40	598	2.38
583	2.26	540	2.07	536	2.27	444	2.16
423	2.49	398	2.05	337	2.51	316	2.38
254	2.37	208	2.35	202	2.11	153	2.41
150	2.16	141	2.23	122	2.18	113	2.42
101	2.51	92	1.90	82	1.98	70	2.10
62	1.58	61	1.90	58	1.97	47	1.24
47	2.04	42	1.32	36	2.13	34	.73
33	.96	30	1.74	23	.61	23	1.73
23	.49	18	1.37	15	.17	15	1.41
14	.26	11	1.22	10	.13	10	1.03
10	.06	7	.57	7	.05	7	.04
6	.52	5	.02	4	.01		

PARAMETER VALUES

PS :	2.38	ALPHA :	.058	BETA :	.0001
(2.18,	2.57)	(.051,	.064)	(-.0003,	.0006)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL :	1.39	RNA :	12.98	PHOSPHATE :	.28
CARBON :	126	DNA :	3.98	NITRATE :	.00
NITROGEN :	14	ATP :	.76	SILICATE :	2.96
		PROTEIN:	71.10	AMMONIA :	1.60

LOUIS SAINT LAURENT

LAT 73 41.5'N LONG 83 26.8'W STATION NO. 52
DATE 1/09/79 DEPTH 0 M

I	P	I	P	I	P	I	P
536	.47	527	.45	435	.51	423	.47
352	.41	322	.40	291	.43	233	.42
224	.42	214	.43	199	.50	159	.45
145	.49	144	.46	122	.44	101	.33
87	.41	81	.37	71	.42	64	.28
56	.46	53	.23	49	.19	46	.37
39	.21	37	.34	35	.14	29	.43
28	.13	23	.28	21	.09	19	.36
16	.20	14	.05	12	.27	10	.03
10	.13	9	.04	7	.02	7	.01
5	.17	4	.03	4	.03	3	.02
3	.02	2	.04	2	.02	1	.03

PARAMETER VALUES

PS : .45 (.40, .50)

ALPHA : .011 (.010, .013)

BETA : .0000 (-.0002, .0002)

SAMPLE TEMPERATURE -1.5 C

INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL : .34

CARBON : 36

NITROGEN : 6

RNA : -

DNA : -

ATP : .09

PROTEIN: 29.90

PHOSPHATE : 1.07

NITRATE : 7.35

SILICATE : 19.99

AMMONIA : 1.29

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 00.0'W STATION NO. 53
DATE 2/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
693	2.11	690	2.46	644	2.33	638	2.56
607	3.12	598	3.16	583	3.00	452	3.10
444	2.84	356	2.98	343	3.02	331	3.06
302	3.11	214	2.94	208	2.79	208	3.12
198	3.02	153	2.64	140	2.64	115	2.83
110	2.77	98	2.07	95	2.31	68	1.49
65	2.42	60	2.70	53	1.56	50	.90
42	.85	36	.49	35	2.09	34	2.09
30	.64	25	.32	22	.39	22	1.34
21	1.37	15	.13	15	.17	14	.96
13	.97	11	.06	10	.05	8	.64
8	.58	7	.03	7	.00	5	.36
5	.36						

PARAMETER VALUES

PS : 3.79
(3.23, 4.35)

ALPHA : .042
(.037, .046)

BETA : .0021
(.0007, .0035)

SAMPLE TEMPERATURE 1.0 C

INCUBATION TEMPERATURE 10.0 C

CHLOROPHYLL : .26
CARBON : 56
NITROGEN : 9

RNA : 1.90
DNA : 1.31
ATP : .23
PROTEIN: 36.50

PHOSPHATE : .64
NITRATE : 2.52
SILICATE : 10.70
AMMONIA : 1.18

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 00.0'W STATION NO. 54
DATE 3/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
721	1.93	675	2.09	607	2.01	601	2.35
567	2.04	552	2.20	472	2.27	463	2.02
414	2.03	392	1.99	337	2.18	303	2.33
279	2.15	234	2.09	233	2.11	216	2.37
187	2.01	153	1.98	151	2.02	145	2.00
116	2.02	101	2.15	98	2.05	95	2.12
75	1.87	69	1.93	68	1.92	65	1.95
48	1.53	48	1.65	47	1.45	46	1.79
34	1.13	33	1.17	32	1.36	30	1.38
24	.91	24	.97	23	1.04	22	1.06
16	.59	16	.65	15	.78	15	.77
10	.46	10	.47	6	.35	6	.36
5	.31	4	.33	3	.29	2	.29
2	.28	2	.29	1	.27	1	.28
1	.26	1	.29				

PARAMETER VALUES

PS :	2.19	ALPHA :	.059	BETA :	.0002
(2.13,	2.26)	(.057,	.062)	(0.0000,	.0003)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL :	.38	RNA :	1.81	PHOSPHATE :	.64
CARBON :	65	DNA :	1.95	NITRATE :	2.57
NITROGEN :	11	ATP :	.18	SILICATE :	12.19
		PROTEIN:	49.70	AMMONIA :	9.44

LOUIS SAINT LAURENT

LAT 72 41.9'N LONG 78 02.4'W STATION NO. 55
DATE 4/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
583	4.05	463	4.02	444	4.84	383	4.69
368	4.62	337	4.49	302	4.51	248	4.42
222	4.55	217	4.24	191	4.49	147	4.47
141	4.51	125	4.37	125	4.46	98	4.24
92	4.20	90	4.07	89	4.13	65	4.07
65	3.59	58	3.94	52	4.24	49	2.73
46	2.88	38	1.98	36	3.65	36	1.99
36	3.64	29	1.58	28	1.38	23	2.30
23	3.12	20	.77	17	.71	16	1.94
15	2.18	13	.49	12	.45	11	1.46
10	1.46	9	.28	9	.25	7	.13
6	.10	4	.02	4	.04	2	.03
1	.00						

PARAMETER VALUES

PS :	ALPHA :	BETA :
5.03	.103	.0016
(4.56, 5.50)	(.094, .112)	(.0001, .0032)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.2 C

CHLOROPHYLL :	.70	RNA :	5.85	PHOSPHATE :	.53
CARBON :	56	DNA :	3.42	NITRATE :	.97
NITROGEN :	12	ATP :	.51	SILICATE :	7.95
		PROTEIN:	41.30	AMMONIA :	1.71

LOUIS SAINT LAURENT

LAT 72 42.0'N LONG 78 17.0'W STATION NO. 57
DATE 5/09/79 DEPTH 0 M

I	P	I	P	I	P	I	P
721	4.64	675	4.96	583	4.99	583	5.26
567	4.80	460	4.45	429	4.80	398	4.71
368	4.15	300	4.80	260	4.61	239	4.12
224	4.37	213	4.26	171	4.26	161	4.48
151	4.44	142	4.34	119	4.58	101	3.04
101	4.31	87	3.71	79	2.94	68	4.24
65	2.81	62	4.59	49	1.99	42	1.48
42	4.04	42	4.07	35	1.46	33	.77
28	3.38	26	3.16	24	.73	22	.43
17	2.43	16	2.30	15	.40	15	.23
11	1.50	10	.19	10	1.64	10	.08
7	.08						

PARAMETER VALUES

PS :	4.66	ALPHA :	.089	BETA :	.0000
(4.15,	5.17)	(.077,	.101)	(-.0012,	.0012)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.2 C

CHLOROPHYLL :	.59	RNA :	3.21	PHOSPHATE :	.63
CARBON :	75	DNA :	1.92	NITRATE :	1.18
NITROGEN :	13	ATP :	.28	SILICATE :	8.53
		PROTEIN:	43.20	AMMONIA :	.99

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 58
DATE 7/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
736	.30	675	.35	583	.71	583	.56
583	1.17	567	1.13	460	.83	429	.86
398	1.42	398	1.25	368	1.20	300	1.19
260	1.55	239	1.53	224	1.56	213	1.48
171	1.72	161	1.49	151	1.49	142	1.56
101	1.51	101	1.38	101	1.54	79	1.54
68	1.32	65	1.48	62	1.50	56	1.45
49	1.50	42	1.56	42	1.35	42	1.29
35	1.32	33	1.15	28	1.09	26	.95
24	1.10	22	1.44	17	.57	16	.71
15	.15	15	.17	11	.26	10	.09
10	.46	10	.07	7	.04	7	.05
5	.00	4	.01				

PARAMETER VALUES

PS :	ALPHA :	BETA :
2.25	.047	.0041
(2.02, 2.48)	(.042, .051)	(.0030, .0052)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL :	4.60	RNA :	18.91	PHOSPHATE :	.40
CARBON :	147	DNA :	7.33	NITRATE :	.17
NITROGEN :	23	ATP :	.74	SILICATE :	5.54
		PROTEIN:	79.40	AMMONIA :	.32

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 59
DATE 7/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
460	.94	457	1.09	423	1.07	417	1.35
343	1.26	331	1.38	306	1.34	282	1.05
239	1.64	230	1.84	220	1.47	199	1.66
167	1.67	161	1.81	139	1.83	122	1.59
113	1.69	102	1.78	87	1.62	79	1.81
74	1.84	73	1.81	53	1.57	52	1.85
50	1.78	48	1.77	38	1.58	36	1.54
34	1.62	33	1.66	27	1.49	27	1.58
24	1.60	23	1.74	21	1.33	21	1.22
17	1.44	17	1.52	15	.85	14	.95
13	1.21	11	1.20	10	.73	10	.63
9	.84	8	.83	8	.33	7	.30
5	.16	5	.14	3	.10	3	.09
2	.03	2	.03	1	.01	1	.01
1	.02	0	.01				

PARAMETER VALUES

PS : 2.11 ALPHA : .100 BETA : .0030

(2.00, 2.21) (.093, .107) (.0024, .0036)

SAMPLE TEMPERATURE .7 C INCUBATION TEMPERATURE 3.0 C

CHLOROPHYLL :	2.38	RNA :	11.46	PHOSPHATE :	.34
CARBON :	155	DNA :	7.82	NITRATE :	.00
NITROGEN :	16	ATP :	.77	SILICATE :	2.30
		PROTEIN:	63.90	AMMONIA :	2.85

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 60
DATE 8/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
460	2.37	457	2.33	423	2.41	343	2.16
331	2.15	306	2.34	282	2.04	239	2.11
220	1.87	199	2.10	167	2.10	161	2.56
139	2.22	122	2.20	113	2.52	102	2.14
87	2.46	79	2.02	74	2.29	73	2.17
53	1.97	52	2.28	50	2.35	48	2.19
38	2.37	36	2.37	34	2.16	34	2.02
27	1.50	27	1.56	24	1.93	23	1.89
21	1.32	21	1.14	17	1.57	17	1.51
15	.95	14	.77	13	1.25	11	1.21
10	.65	10	.52	9	.78	8	.76
8	.23	7	.25	5	.15	5	.15
3	.07	3	.23	2	.01	2	.00
1	.01	1	.02	1	.01	0	.01

PARAMETER VALUES

PS	ALPHA	BETA
2.40	.105	.0005
(2.27, 2.52)	(.097, .113)	(0.0000, .0010)

SAMPLE TEMPERATURE .7 C INCUBATION TEMPERATURE 3.2 C

CHLOROPHYLL	2.34	RNA	12.44	PHOSPHATE	.37
CARBON	96	DNA	4.96	NITRATE	.13
NITROGEN	15	ATP	.57	SILICATE	4.65
		PROTEIN	82.00	AMMONIA	.37

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 61
DATE 8/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
460	.36	460	.33	429	.40	429	.36
343	.80	340	.42	331	.55	331	.35
245	1.15	233	1.28	211	1.32	165	1.26
165	1.17	156	1.21	141	1.43	118	1.33
108	1.36	107	1.38	92	1.30	82	1.32
76	1.33	66	1.32	58	1.24	51	1.37
48	1.39	41	1.49	37	1.41	32	1.25
32	1.50	27	1.24	24	1.24	23	1.18
22	1.08	18	1.13	17	1.10	17	.86
16	.87	13	.68	13	.90	12	.82
11	.68	9	.64	8	.68	8	.41
8	.41	5	.21	5	.24	3	.12
3	.11	2	.06	2	.06	1	.02
1	.01						

PARAMETER VALUES

PS	ALPHA	BETA
2.01	.078	.0067
(1.88, 2.14)	(.073, .083)	(.0056, .0079)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL	6.16	RNA	15.10	PHOSPHATE	.40
CARBON	109	DNA	4.25	NITRATE	1.21
NITROGEN	19	ATP	.61	SILICATE	7.44
		PROTEIN	146.50	AMMONIA	.79

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 62
DATE 9/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
660	.37	634	.38	600	.41	566	.53
456	.57	444	.55	424	.38	421	.44
312	.99	279	.79	269	1.10	232	1.18
211	1.31	210	1.10	194	1.19	147	1.31
135	1.15	122	1.17	105	1.20	98	1.16
93	1.10	90	1.15	69	1.40	67	1.32
65	1.25	63	1.10	46	1.27	46	1.27
42	1.17	42	1.12	30	.97	28	1.05
28	1.08	26	1.04	21	.76	20	.78
18	.93	18	.89	15	.58	14	.55
13	.65	12	.55	11	.40	10	.50
6	.23	5	.23	4	.12	3	.13
2	.06	2	.07	2	.02	1	.02
1	.01	1	.01	0	.00		

PARAMETER VALUES

PS : 1.69 ALPHA : .056 BETA : .0038

(1.60, 1.77) (.053, .059) (.0033, .0044)

SAMPLE TEMPERATURE .8 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL	8.47	RNA	19.31	PHOSPHATE	.41
CARBON	163	DNA	4.06	NITRATE	.00
NITROGEN	23	ATP	.80	SILICATE	3.42
		PROTEIN	152.60	AMMONIA	1.10

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 63
DATE 9/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
444	3.03	444	3.03	440	2.57	389	3.01
308	2.98	306	3.14	283	2.94	260	2.95
211	2.85	186	2.90	165	3.07	152	2.85
131	2.82	126	3.11	107	3.14	104	2.69
84	2.74	82	3.15	73	2.84	69	3.04
54	2.83	48	2.74	48	2.86	44	2.75
36	2.64	35	2.57	35	2.55	30	2.49
26	1.74	24	1.94	23	2.00	20	1.96
17	1.27	16	1.41	14	1.24	13	1.23
10	.84	10	.88	10	.89	9	.84
7	.55	6	.51	4	.20	3	.19
2	.08	2	.08	1	.03	1	.03
0	.01						

PARAMETER VALUES

PS : 3.16	ALPHA : .121	BETA : .0007
(3.06, 3.27)	(.115, .127)	(.0003, .0011)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 3.2 C

CHLOROPHYLL : 2.71	RNA : 15.47	PHOSPHATE : .40
CARBON : 117	DNA : 3.57	NITRATE : .00
NITROGEN : 18	ATP : .74	SILICATE : 3.56
	PROTEIN: 114.80	AMMONIA : .60

LOUIS SAINT LAURENT

LAT 74 32.3'N LONG 82 27.0'W STATION NO. 64
DATE 10/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
677	2.33	655	2.64	592	1.77	482	2.08
440	2.62	416	3.16	414	2.87	317	2.17
268	3.05	266	2.73	262	2.39	194	2.28
189	2.61	181	2.53	177	2.69	131	2.57
129	2.84	120	2.36	118	3.00	88	2.96
79	2.52	62	2.53	52	2.62	51	2.59
50	2.58	50	3.07	47	2.49	37	2.39
34	2.24	34	2.31	32	2.41	26	1.75
25	1.77	24	1.48	23	1.67	17	1.00
17	1.32	17	1.20	16	1.02	12	.83
11	.64	11	.73	10	.68	8	.39
6	.43	4	.14	3	.17	3	.05
2	.06	2	.03	1	.02	1	.01

PARAMETER VALUES

PS : 2.99 ALPHA : .102 BETA : .0012

(2.84, 3.13) (.094, .109) (.0007, .0017)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL :	2.07	RNA :	12.11	PHOSPHATE :	.37
CARBON :	124	DNA :	3.62	NITRATE :	.01
NITROGEN :	16	ATP :	.62	SILICATE :	3.30
		PROTEIN:	90.50	AMMONIA :	.21

LOUIS SAINT LAURENT

LAT 74 34.8'N LONG 83 11.0'W STATION NO. 65
DATE 11/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
651	1.46	634	1.40	600	1.49	592	1.39
482	1.34	465	1.07	461	1.12	363	1.14
324	1.43	313	1.51	313	1.75	250	1.35
249	1.52	215	1.63	191	1.60	168	1.62
165	1.53	147	1.59	126	1.72	107	1.54
104	1.68	94	1.67	73	1.76	72	1.70
66	1.65	55	1.65	55	1.69	54	1.58
41	1.57	41	1.57	38	1.69	34	1.63
30	1.51	29	1.45	26	1.47	25	1.65
21	1.24	20	1.19	18	1.40	17	1.17
15	1.16	15	1.12	8	.63	8	.66
5	.35	5	.34	4	.23	4	.20
3	.12	2	.15	1	.04	1	.04
1	.01	1	.02	0	.01	0	.00

PARAMETER VALUES

PS : 1.77 ALPHA : .106 BETA : .0010

(1.72, 1.82) (.100, .113) (.0008, .0011)

SAMPLE TEMPERATURE -.2 C INCUBATION TEMPERATURE 2.0 C

CHLOROPHYLL :	1.55	RNA :	9.41	PHOSPHATE :	.31
CARBON :	96	DNA :	3.60	NITRATE :	.00
NITROGEN :	12	ATP :	.48	SILICATE :	1.27
		PROTEIN:	84.20	AMMONIA :	.50

LOUIS SAINT LAURENT

LAT 74 27.0'N LONG 83 05.0'W STATION NO. 67
DATE 13/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
655	.45	643	.79	592	1.33	588	1.29
444	2.88	444	2.62	325	2.97	315	3.17
306	2.71	285	3.36	232	2.94	215	2.85
190	3.49	189	3.36	160	2.81	148	2.95
125	3.36	119	3.16	90	2.97	71	3.33
63	2.18	61	2.08	61	3.05	49	2.54
42	1.92	41	2.44	37	1.86	36	1.84
31	1.80	24	1.25	24	1.25	22	1.31
22	1.18	17	.88	15	.84	15	.90
13	.91	12	.61	11	.50	10	.58
9	.57	7	.28	5	.29	3	.15
3	.14	2	.08	2	.10	1	.04
1	.05	0	.03	0	.02	0	.02
0	.02	0	.01	0	.01	0	.00

PARAMETER VALUES

PS : 6.59 ALPHA : .064 BETA : .0171

(5.54, 7.64) (.060, .067) (.0119, .0223)

SAMPLE TEMPERATURE -.5 C INCUBATION TEMPERATURE 10.3 C

CHLOROPHYLL	3.84	RNA	14.86	PHOSPHATE	.46
CARBON	124	DNA	3.86	NITRATE	1.00
NITROGEN	20	ATP	.71	SILICATE	5.39
		PROTEIN	105.40	AMMONIA	.70

LOUIS SAINT LAURENT

LAT 74 35.5'N LONG 83 11.5'W STATION NO. 69
DATE 14/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
486	3.40	456	3.93	444	3.66	372	3.95
327	3.17	256	3.54	244	3.79	228	3.17
220	3.45	158	3.35	143	3.55	135	3.90
110	3.65	107	3.99	101	3.71	85	3.09
81	3.13	71	3.25	67	3.70	56	3.10
53	2.41	50	3.02	45	2.81	41	2.44
40	2.67	36	1.95	30	1.86	29	1.70
26	1.82	26	1.45	23	1.35	18	1.18
17	1.18	17	.84	16	.80	11	.48
11	.49	10	.91	10	.75	6	.30
6	.22	4	.11	4	.11	2	.08
2	.05	1	.04	1	.05	1	.01
0	.01	0	.01	0	.02	0	.01

PARAMETER VALUES

PS : 4.04 ALPHA : .086 BETA : .0012

(3.78, 4.29) (.081, .091) (.0003, .0021)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL :	.99	RNA :	8.84	PHOSPHATE :	.38
CARBON :	78	DNA :	3.86	NITRATE :	.00
NITROGEN :	11	ATP :	.33	SILICATE :	1.52
		PROTEIN:	50.40	AMMONIA :	.92

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 0.9W'W STATION NO. 70
DATE 15/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
633	1.56	566	1.66	566	1.46	415	1.76
402	1.54	401	1.47	290	1.63	270	1.75
252	1.58	233	1.68	162	1.79	155	1.55
135	1.72	121	1.61	94	1.58	88	1.73
76	1.62	68	1.64	46	1.66	46	1.59
37	1.57	34	1.49	28	1.54	26	1.55
23	1.31	22	1.31	17	1.46	17	1.39
14	1.09	13	.96	11	1.17	10	1.23
9	.67	9	.79	7	.92	6	.53
6	1.01	5	.51	4	.67	4	.79
3	.28	3	.33	2	.18	2	.18
1	.17	1	.13	1	.09	1	.12
0	.06	0	.05	0	.04	0	.03
0	.04	0	.03	0	.04	0	.02

PARAMETER VALUES

PS : 1.67 ALPHA : .139 BETA : .0002

(1.63, 1.72) (.131, .147) (0.0000, .0003)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 4.0 C

CHLOROPHYLL :	1.09	RNA :	4.75	PHOSPHATE :	.84
CARBON :	55	DNA :	2.98	NITRATE :	2.11
NITROGEN :	8	ATP :	.47	SILICATE :	10.55
		PROTEIN:	45.60	AMMONIA :	1.18

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 0.9W'W STATION NO. 71
DATE 15/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
633	.81	592	.69	566	.70	566	.68
423	.67	415	.62	402	.90	401	.74
290	.85	270	1.09	252	.98	233	.97
162	1.05	155	.99	135	1.08	121	1.09
94	1.08	88	1.01	76	1.11	68	1.01
57	1.07	54	1.07	46	1.00	46	.98
37	1.01	34	1.03	28	1.00	26	.94
23	.92	22	.99	17	.87	17	1.03
14	.79	13	.86	11	.96	10	.92
9	.69	9	.59	7	.71	6	.39
6	.68	5	.43	4	.60	4	.60
3	.23	3	.28	2	.16	2	.15
1	.08	1	.10	1	.05	1	.05
0	.04	0	.03	0	.03	0	.02
0	.02	0	.02	0	.07	0	.01

PARAMETER VALUES

PS : 1.11	ALPHA : .118	BETA : .0009
(1.08, 1.15)	(.110, .125)	(.0007, .0010)

SAMPLE TEMPERATURE 1.2 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL : 1.07	RNA : 3.68	PHOSPHATE : .56
CARBON : 46	DNA : 2.57	NITRATE : 2.78
NITROGEN : 8	ATP : .20	SILICATE : 10.56
	PROTEIN: 30.30	AMMONIA : .66

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 0.9W'W STATION NO. 72
DATE 16/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
634	.83	596	.77	571	.92	550	.73
444	.98	423	.69	402	.89	356	.80
287	1.16	280	.98	264	.96	214	1.09
190	1.23	177	1.07	135	1.10	128	.97
121	1.17	120	1.08	98	1.21	88	1.09
68	1.12	66	.96	63	1.08	61	1.08
44	.88	41	.84	40	1.21	40	1.15
32	.74	26	.62	23	1.10	23	1.15
21	.50	16	.44	15	1.06	13	.33
13	.98	10	.32	10	.89	9	.92
7	.23	6	.71	6	.16	6	.67
4	.09	4	.11	4	.52	3	.47
2	.05	2	.06	1	.04	1	.03
0	.01	0	.02	0	.01	0	.01
0	.01	0	.01				

PARAMETER VALUES

PS : 1.14	ALPHA : .076	BETA : .0006
(1.07, 1.21)	(.066, .085)	(.0004, .0009)

SAMPLE TEMPERATURE .8 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL :	1.19	RNA :	5.90	PHOSPHATE :	.61
CARBON :	47	DNA :	3.33	NITRATE :	2.37
NITROGEN :	9	ATP :	.12	SILICATE :	10.35
		PROTEIN:	47.00	AMMONIA :	.61

LOUIS SAINT LAURENT

LAT 72 42.4'N LONG 78 0.9W'W STATION NO. 73
DATE 16/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
634	1.30	596	1.28	550	1.43	444	1.69
423	1.21	402	1.62	356	1.46	280	1.66
264	1.69	190	1.96	177	1.75	135	1.86
128	1.68	121	1.74	120	1.88	98	1.99
88	1.74	68	1.76	66	1.87	63	1.82
61	1.55	44	1.39	41	1.32	40	1.72
40	1.66	32	1.28	26	1.02	23	1.59
23	1.59	21	.77	16	.73	15	1.57
13	.59	13	1.47	10	.57	10	1.22
9	1.23	7	.45	6	.99	6	.38
6	.89	4	.25	4	.27	4	.70
3	.69	2	.19	2	.25	1	.21
1	.13	0	.12	0	.21	0	.16
0	.13	0	.16	0	.11	0	.08
0	.12						

PARAMETER VALUES

PS : 1.84 ALPHA : .109 BETA : .0009

(1.74, 1.93) (.098, .120) (.0005, .0012)

SAMPLE TEMPERATURE 1.2 C INCUBATION TEMPERATURE 3.5 C

CHLOROPHYLL :	1.24	RNA :	7.77	PHOSPHATE :	.51
CARBON :	51	DNA :	3.31	NITRATE :	1.50
NITROGEN :	20	ATP :	.31	SILICATE :	9.70
		PROTEIN:	53.30	AMMONIA :	1.00

LOUIS SAINT LAURENT

LAT 74 39.1'N LONG 94 45.0'W STATION NO. 74
DATE 18/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
550	2.10	465	2.18	444	2.15	440	1.70
406	1.99	351	1.75	317	2.20	304	2.18
296	1.91	262	1.92	236	2.14	222	1.87
216	1.95	169	2.14	162	2.04	160	1.61
148	1.82	124	1.56	119	1.91	109	1.44
101	2.02	88	1.93	86	1.51	80	1.44
79	1.60	63	1.28	61	1.35	60	1.50
55	1.20	44	.91	44	.85	42	.94
42	.77	32	.47	32	.45	30	.54
30	.58	22	.30	22	.37	19	.30
17	.30	12	.18	11	.16	9	.11
6	.14	6	.15	4	.14	3	.04
2	.10	2	.14	1	.01	1	.03
1	.01	0	.05	0	.11	0	.03
0	.01						

PARAMETER VALUES

PS : 2.38 ALPHA : .028 BETA : .0009

(2.09, 2.67) (.026, .030) (0.0000, .0017)

SAMPLE TEMPERATURE -.7 C INCUBATION TEMPERATURE 2.8 C

CHLOROPHYLL	: 1.03	RNA	: 9.90	PHOSPHATE	: .36
CARBON	: 81	DNA	: 3.05	NITRATE	: .00
NITROGEN	: 24	ATP	: .22	SILICATE	: 3.66
		PROTEIN	: 54.70	AMMONIA	: .86

LOUIS SAINT LAURENT

LAT 73 04.9'N LONG 84 34.3'W STATION NO. 75
DATE 19/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
397	3.20	372	3.09	319	3.55	313	4.08
296	3.87	266	3.15	221	3.73	202	3.98
196	2.99	169	3.68	165	3.75	148	4.12
135	2.86	116	3.83	110	4.00	97	2.67
90	2.80	84	3.44	82	3.60	66	3.44
63	2.84	63	2.99	61	2.70	49	2.26
46	2.78	46	2.01	42	2.46	36	1.44
35	1.34	30	1.94	29	1.65	28	.84
26	1.15	25	1.19	21	.95	14	.81
14	.50	10	.32	9	.34	7	.13
7	.11	5	.04				

PARAMETER VALUES

PS : 5.44	ALPHA : .065	BETA : .0072
(4.11, 6.77)	(.060, .071)	(.0014, .0130)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 2.3 C

CHLOROPHYLL :	.27	RNA :	1.11	PHOSPHATE :	.28
CARBON :	46	DNA :	2.61	NITRATE :	.00
NITROGEN :	19	ATP :	.08	SILICATE :	.69
		PROTEIN:	58.20	AMMONIA :	.32

LOUIS SAINT LAURENT

LAT 73 40.4'N LONG 80 52.0'W STATION NO. 77
DATE 20/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
647	2.53	596	2.11	507	2.78	482	2.28
482	1.84	465	2.47	380	2.06	344	2.63
330	2.66	326	2.18	267	2.15	247	2.51
228	2.23	210	2.10	200	2.23	169	2.28
167	2.14	142	2.37	139	1.88	125	2.16
94	2.06	93	2.59	91	1.80	88	2.25
70	1.82	69	2.39	60	1.66	54	2.25
52	1.82	52	1.58	46	1.29	42	1.87
37	.89	37	.96	35	1.36	33	1.52
28	.67	27	.96	25	.86	24	.76
21	.66	17	.77	12	.33	10	.41
8	.23	7	.18	5	.10	4	.11
3	.06	3	.06	2	.03	2	.02
1	.00	1	.01	0	.04	0	.00

PARAMETER VALUES

PS : 2.39 ALPHA : .051 BETA : .0001

(2.23, 2.55) (.047, .055) (-.0003, .0006)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL	: 3.21	RNA	: 14.32	PHOSPHATE	: .40
CARBON	: 110	DNA	: 3.92	NITRATE	: .06
NITROGEN	: 42	ATP	: .46	SILICATE	: 3.49
		PROTEIN	: 89.50	AMMONIA	: 1.28

LOUIS SAINT LAURENT

LAT 73 40.4'N LONG 80 52.0'W STATION NO. 79
DATE 22/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
634	1.36	613	1.34	550	1.15	503	1.39
461	1.29	431	1.25	397	1.14	330	1.06
289	1.13	275	1.39	241	1.24	222	1.19
192	1.08	148	1.06	137	1.11	135	1.28
99	1.02	97	1.32	80	1.29	75	1.05
67	1.06	67	1.06	51	.95	48	.92
47	1.16	46	1.04	38	.71	32	.76
30	1.00	29	1.03	26	.54	25	.56
20	.93	20	.34	19	.33	18	.90
13	.68	11	.62	8	.46	8	.52
5	.40	5	.32	2	.20	2	.17
1	.12	1	.09	1	.06	0	.05
0	.06	0	.02	0	.01	0	.01
0	.02	0	.00	0	.01	0	.00

PARAMETER VALUES

PS	ALPHA	BETA
1.20	.048	.0000
(1.14, 1.27)	(.044, .053)	(-.0002, .0002)

SAMPLE TEMPERATURE .9 C INCUBATION TEMPERATURE 2.8 C

CHLOROPHYLL	3.28	RNA	14.08	PHOSPHATE	.36
CARBON	113	DNA	5.11	NITRATE	.40
NITROGEN	27	ATP	.59	SILICATE	4.10
		PROTEIN	115.60	AMMONIA	.53

LOUIS SAINT LAURENT

LAT 73 40.4'N LONG 80 52.0'W STATION NO. 80
DATE 22/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
617	1.50	566	1.41	507	1.44	460	1.18
460	1.18	423	1.42	346	1.09	322	1.52
276	1.33	247	1.37	241	1.25	220	1.41
160	1.15	154	1.08	152	1.45	137	1.42
110	1.46	101	1.20	93	1.47	85	1.41
78	1.21	75	1.28	60	.87	58	1.04
52	1.23	50	1.09	44	.78	42	.73
33	.60	32	1.26	31	1.10	27	.30
24	.39	23	1.11	19	.91	16	.18
15	.26	15	.82	12	.86	10	.16
10	.14	9	.60	8	.59	7	.07
6	.08	5	.41	5	.46	5	.04
5	.04	3	.03	3	.02	2	.02
2	.01	1	.01	1	.01	0	.01

PARAMETER VALUES

PS : 1.34 ALPHA : .041 BETA : .0000

(1.23, 1.45) (.036, .046) (-.0003, .0003)

SAMPLE TEMPERATURE 0.0 C INCUBATION TEMPERATURE 2.0 C

CHLOROPHYLL	: 2.81	RNA	: 9.98	PHOSPHATE	: .30
CARBON	: 124	DNA	: 4.86	NITRATE	: .00
NITROGEN	: 30	ATP	: .69	SILICATE	: 2.54
		PROTEIN	: 92.30	AMMONIA	: .34

LOUIS SAINT LAURENT

LAT 73 40.4'N LONG 80 52.0'W STATION NO. 82
DATE 23/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
592	2.84	550	3.16	423	3.23	414	2.86
352	2.95	321	2.84	302	2.98	251	2.51
220	3.26	209	2.63	205	2.87	169	2.82
155	2.84	154	3.19	136	3.10	124	2.51
122	2.65	112	2.74	87	2.14	85	2.71
66	2.54	62	2.49	60	2.37	48	2.51
44	2.24	43	2.27	36	2.13	34	1.80
32	1.94	31	2.07	26	1.57	24	1.45
22	1.61	22	1.95	13	1.01	13	.97
9	.47	6	.60	7	.40	5	.44
4	.24	4	.25	2	.08	2	.09
1	.05	1	.06	1	.04	0	.03
0	.02	0	.01				

PARAMETER VALUES

PS : 2.89	ALPHA : .093	BETA : .0000
(2.79, 2.99)	(.087, .098)	(-.0003, .0003)

SAMPLE TEMPERATURE .3 C INCUBATION TEMPERATURE 3.2 C

CHLOROPHYLL : 3.34	RNA : 13.75	PHOSPHATE : .37
CARBON : 100	DNA : 5.11	NITRATE : .01
NITROGEN : 27	ATP : .55	SILICATE : 3.13
	PROTEIN: 87.70	AMMONIA : 1.23

LOUIS SAINT LAURENT

LAT 73 40.4'N LONG 80 52.0'W STATION NO. 83
DATE 24/09/79 DEPTH 10 M

I	P	I	P	I	P	I	P
592	3.16	579	2.57	528	3.11	444	2.69
423	3.00	412	2.78	385	2.65	340	2.49
283	3.01	283	2.97	268	2.39	253	2.81
220	3.14	195	2.96	192	2.80	162	2.84
158	2.53	143	2.94	139	2.91	114	2.47
100	2.64	100	2.71	90	3.16	85	2.69
71	3.15	71	2.91	58	2.25	57	2.68
49	2.42	49	2.53	42	2.42	40	2.90
38	2.12	36	2.44	33	2.55	29	1.78
27	1.93	25	2.01	20	2.04	19	1.50
18	1.56	18	1.80	15	1.77	10	.95
10	.82	7	.62	7	.52	5	.42
5	.42	4	.33	3	.26	2	.14
2	.17	1	.11	1	.09	1	.09
1	.05	0	.03	0	.05		

PARAMETER VALUES

PS :	ALPHA :	BETA :
2.85	.126	.0001
(2.77, 2.94)	(.118, .134)	(-.0002, .0003)

SAMPLE TEMPERATURE .5 C INCUBATION TEMPERATURE 5.0 C

CHLOROPHYLL :	3.48	RNA :	13.59	PHOSPHATE :	.43
CARBON :	126	DNA :	4.92	NITRATE :	.23
NITROGEN :	31	ATP :	.69	SILICATE :	3.16
		PROTEIN:	81.10	AMMONIA :	.81

LOUIS SAINT LAURENT

LAT 73 04.5'N
DATE 27/09/79

LONG 84 28.9'W

STATION NO. 92
DEPTH 10 M

I	P	I	P	I	P	I	P
592	3.10	550	3.17	511	2.82	452	2.91
423	2.99	389	2.81	293	3.18	287	2.88
275	3.03	260	3.20	194	2.98	179	2.66
159	3.10	148	3.20	110	3.13	108	2.95
106	2.94	90	3.13	76	2.91	69	2.95
65	3.21	64	2.89	44	2.62	42	2.89
41	2.93	38	2.63	30	3.05	28	2.86
28	2.76	27	2.73	20	2.32	19	2.54
18	1.96	13	2.22	13	1.77	12	1.62
11	1.58	9	1.82	8	1.32	7	1.47
4	1.10	3	.59	2	.79	2	.36
1	.49	1	.45	1	.24	0	.16
0	.33	0	.04	0	.14	0	.05
0	.07	0	.00	0	.02		

PARAMETER VALUES

PS : 3.00
(2.95, 3.06)

ALPHA : .237
(.226, .248)

BETA : .0000
(-.0002, .0002)

SAMPLE TEMPERATURE -.5 C

INCUBATION TEMPERATURE 7.5 C

CHLOROPHYLL : .74
CARBON : 39
NITROGEN : 17

RNA : 4.79
DNA : 2.99
ATP : .08
PROTEIN: 24.90

PHOSPHATE : .40
NITRATE : .00
SILICATE : 1.57
AMMONIA : .68

LOUIS SAINT LAURENT

LAT 74 30.3'N
DATE 29/09/79

LONG 92 46.0'W

STATION NO. 94
DEPTH 0 M

I	P	I	P	I	P	I	P
592	1.05	571	1.07	511	1.24	452	1.46
452	1.38	423	1.43	389	1.28	293	1.51
287	1.30	275	1.59	260	1.53	194	1.57
179	1.28	159	1.62	148	1.36	110	1.56
108	1.42	106	1.65	90	1.42	76	1.30
69	1.65	65	1.58	64	1.27	44	1.46
42	1.17	41	1.17	38	1.07	30	1.09
28	1.04	28	.94	27	1.18	20	1.04
20	.70	19	.65	18	.69	14	.41
13	.43	13	.34	12	.41	11	.36
9	.29	8	.29	7	.22	5	.23
4	.20	3	.10	2	.13	2	.10
1	.11	1	.08	1	.08	0	.04
0	.10	0	.04	0	.05	0	.09
0	.03	0	.04	0	.07		

PARAMETER VALUES

PS : 1.74
(1.66, 1.82)

ALPHA : .050
(.047, .052)

BETA : .0012
(.0009, .0014)

SAMPLE TEMPERATURE -1.8 C

INCUBATION TEMPERATURE 7.1 C

CHLOROPHYLL : .90
CARBON : 63
NITROGEN : 23

RNA : 4.67
DNA : 3.38
ATP : .12
PROTEIN: 27.00

PHOSPHATE : .38
NITRATE : .06
SILICATE : 3.30
AMMONIA : 5.64

LOUIS SAINT LAURENT

LAT 73 58.3'N LONG 113 17.'W STATION NO. 96
DATE 1/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
592	.89	571	.74	550	1.00	511	1.22
452	1.03	452	.99	423	.96	389	.99
293	1.08	287	1.12	275	1.18	260	1.01
194	1.21	179	1.07	148	1.00	110	.97
108	1.24	106	.90	90	1.09	76	1.07
69	1.02	65	1.04	64	1.15	44	.92
42	.86	41	1.19	38	1.03	28	.81
27	.87	20	.54	20	.92	19	.98
18	.67	14	.69	13	.62	13	.30
12	.20	11	.17	9	.29	8	.50
7	.01	5	.17	4	.25	3	.45
2	.59	2	.31	1	.27	1	.17
1	.21	0	.11	0	.26		

PARAMETER VALUES

PS :	1.14	ALPHA :	.054	BETA :	.0003
(1.07,	1.21)	(.046,	.060)	(.0001,	.0006)

SAMPLE TEMPERATURE -2.0 C INCUBATION TEMPERATURE 7.0 C

CHLOROPHYLL :	.12	RNA :	1.47	PHOSPHATE :	.62
CARBON :	28	DNA :	2.41	NITRATE :	1.09
NITROGEN :	13	ATP :	.08	SILICATE :	9.46
		PROTEIN:	29.30	AMMONIA :	1.79

LOUIS SAINT LAURENT

LAT 73 36.5'N LONG 113 50.'W STATION NO. 98
DATE 3/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
592	.21	571	.27	550	.35	511	.32
452	.86	452	.58	423	.31	389	.39
293	.76	287	.72	275	.63	260	.92
194	.92	179	.73	159	.88	148	.94
110	.87	108	1.13	106	1.11	90	1.20
76	1.05	69	.86	65	.91	64	.78
44	.81	42	.74	41	.96	38	.87
28	.81	28	1.09	27	.74	20	.61
20	.64	19	.91	18	.71	14	.64
13	.73	13	.61	12	.57	11	.55
9	.55	8	.32	7	.43	5	.30
4	.29	3	.16	2	.22	2	.07
1	.09	1	.23	1	.02	0	.01
0	.03	0	.02	0	.04	0	.02

PARAMETER VALUES

PS : 1.20 ALPHA : .060 BETA : .0025

(1.13, 1.26) (.056, .065) (.0021, .0029)

SAMPLE TEMPERATURE -2.0 C INCUBATION TEMPERATURE 6.8 C

CHLOROPHYLL	.22	RNA	1.55	PHOSPHATE	.65
CARBON	32	DNA	1.70	NITRATE	1.52
NITROGEN	15	ATP	.07	SILICATE	9.97
		PROTEIN	25.80	AMMONIA	.19

LOUIS SAINT LAURENT

LAT 72 14.6'N LONG 119 09.'W STATION NO. 102
DATE 5/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
550	1.77	516	1.38	465	1.77	465	1.34
465	1.32	296	1.33	289	2.04	278	1.86
274	1.60	169	1.75	162	1.73	148	1.95
148	1.67	84	2.08	82	1.33	75	1.60
49	1.73	46	1.26	46	1.27	46	1.40
31	1.38	29	1.27	28	1.29	27	1.17
18	.77	18	.72	17	.90	16	.88
11	.40	11	.46	10	.36	10	.45
6	.23	6	.19	6	.16	6	.41
4	.15	3	.14	3	.13	3	.12
2	.06	1	.02	1	.02	1	.03
0	.03	0	.03	0	.01	0	.01
0	.02	0	.00				

PARAMETER VALUES

PS :	1.96	ALPHA :	.058	BETA :	.0010
(1.83,	2.08)	(.053,	.062)	(.0006,	.0014)

SAMPLE TEMPERATURE -1.6 C INCUBATION TEMPERATURE 8.0 C

CHLOROPHYLL :	.50	RNA :	5.97	PHOSPHATE :	.43
CARBON :	44	DNA :	2.51	NITRATE :	.00
NITROGEN :	14	ATP :	.07	SILICATE :	3.37
		PROTEIN:	46.70	AMMONIA :	.19

LOUIS SAINT LAURENT

LAT 69 57.8'N LONG 133 20.'W STATION NO. 104
DATE 7/10/79 DEPTH 10 M

I	P	I	P	I	P	I	P
550	.51	550	.50	511	.36	507	.37
397	1.45	395	1.13	382	1.45	359	1.53
245	1.48	228	1.58	226	1.85	216	1.84
126	1.52	116	1.64	110	1.89	107	1.74
66	1.57	59	1.48	56	1.71	53	1.71
34	1.27	31	1.14	31	1.23	28	1.29
19	.83	18	1.02	17	.80	14	.79
11	.57	10	.50	10	.54	8	.50
6	.29	5	.28	5	.34	4	.37
3	.18	3	.19	3	.22	2	.16
2	.11	1	.12	1	.11	1	.09
0	.05	0	.09	0	.01	0	.02
0	.03	0	.01	0	.08	0	.01
0	.01	0	.01	0	.09	0	.02
0	.04						

PARAMETER VALUES

PS : 2.78 ALPHA : .055 BETA : .0069

(2.52, 3.04) (.052, .059) (.0054, .0083)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 7.2 C

CHLOROPHYLL :	.45	RNA :	-	PHOSPHATE :	.91
CARBON :	81	DNA :	-	NITRATE :	1.45
NITROGEN :	15	ATP :	.07	SILICATE :	16.75
		PROTEIN:	58.10	AMMONIA :	.87

LOUIS SAINT LAURENT

LAT 69 57.6'N LONG 133 20.'W STATION NO. 105
DATE 7/10/79 DEPTH 10 M

I	P	I	P	I	P	I	P
588	.70	550	.79	528	.82	507	.95
444	2.07	418	1.97	393	2.25	378	2.03
254	2.12	232	2.17	169	2.50	152	2.35
139	2.19	135	2.35	96	2.38	88	2.64
85	2.43	77	2.17	63	2.35	59	2.54
55	2.12	50	2.17	41	1.90	40	2.08
36	1.60	35	1.59	25	1.55	25	1.39
22	1.15	22	1.02	16	1.03	16	.66
13	.71	13	.81	11	.70	11	.75
9	.51	8	.48	7	.46	6	.32
5	.30	4	.45	3	.20	3	.28
2	.09	2	.20	1	.13	1	.09
0	.02	0	.05	0	.04	0	.02
0	.10	0	.03	0	.02	0	.05
0	.04	0	.03				

PARAMETER VALUES

PS : 3.61 (3.32, 3.89)

ALPHA : .070 (.066, .074)

BETA : .0073 (.0059, .0087)

SAMPLE TEMPERATURE 1.0 C

INCUBATION TEMPERATURE 10.0 C

CHLOROPHYLL : .38

CARBON : 58

NITROGEN : 13

RNA : -

DNA : -

ATP : .07

PROTEIN: 38.10

PHOSPHATE : .91

NITRATE : 1.68

SILICATE : 15.53

AMMONIA : .74

LOUIS SAINT LAURENT

LAT 69 57.8'N LONG 133 20.'W STATION NO. 106
DATE 7/10/79 DEPTH 10 M

I	P	I	P	I	P	I	P
592	.54	558	.89	541	1.18	528	1.30
468	2.61	465	2.24	444	2.23	401	2.52
291	3.08	279	3.07	275	3.00	272	3.28
178	2.97	171	2.96	165	2.98	147	3.43
106	2.94	101	3.32	100	3.05	93	2.89
68	3.11	67	2.93	66	2.40	44	2.57
42	2.88	40	2.97	39	2.55	28	1.95
28	2.23	27	2.10	26	1.95	19	1.43
19	1.50	17	2.53	12	1.11	12	.91
12	.87	11	1.15	9	.65	8	.66
8	.62	7	.71	4	.30	4	.46
2	.17	2	.18	1	.08	1	.08
1	.03	1	.05	0	.06	0	.04
0	.03	0	.04	0	.00	0	.05
0	.04						

PARAMETER VALUES

PS :	4.42	ALPHA :	.102	BETA :	.0081
(4.07,	4.76)	(.095,	.110)	(.0064,	.0098)

SAMPLE TEMPERATURE .8 C INCUBATION TEMPERATURE 14.5 C

CHLOROPHYLL :	.37	RNA :	.98	PHOSPHATE :	.86
CARBON :	59	DNA :	1.16	NITRATE :	1.76
NITROGEN :	14	ATP :	.07	SILICATE :	17.46
		PROTEIN:	36.30	AMMONIA :	1.00

LOUIS SAINT LAURENT

LAT 69 57.8'N LONG 133 20.'W STATION NO. 107
DATE 8/10/79 DEPTH 10 M

I	P	I	P	I	P	I	P
592	1.61	571	1.37	528	2.05	528	1.59
444	2.34	426	2.79	423	2.80	412	2.16
287	2.61	262	3.47	259	3.08	188	3.25
169	2.90	154	3.11	152	3.15	105	3.28
102	3.10	97	3.26	97	3.41	74	3.35
64	3.45	63	3.22	62	2.97	55	2.76
46	2.91	46	2.69	44	2.86	33	2.60
32	2.45	31	2.58	31	2.34	24	2.37
22	2.07	22	1.76	21	2.17	16	1.93
16	1.70	15	1.67	14	1.63	11	1.15
11	.94	11	1.18	10	1.07	6	.78
6	.53	3	.42	3	.47	2	.18
2	.19	1	.23	1	.12	1	.01
0	.09						

PARAMETER VALUES

PS : 3.96 ALPHA : .130 BETA : .0051

(3.81, 4.10) (.123, .136) (.0044, .0058)

SAMPLE TEMPERATURE 1.3 C INCUBATION TEMPERATURE 6.0 C

CHLOROPHYLL	.39	RNA	1.23	PHOSPHATE	.89
CARBON	54	DNA	.29	NITRATE	1.66
NITROGEN	17	ATP	.08	SILICATE	16.58
		PROTEIN	34.00	AMMONIA	.87

LOUIS SAINT LAURENT

LAT 69 57.8'N LONG 133 20.'W STATION NO. 108
DATE 8/10/79 DEPTH 10 M

I	P	I	P	I	P	I	P
571	1.53	560	1.28	537	1.62	507	2.11
444	2.09	427	1.97	421	1.58	418	1.97
306	2.65	306	2.43	281	2.50	275	2.83
194	3.04	190	3.40	173	3.21	152	3.19
115	2.91	114	2.77	81	3.45	77	2.64
72	2.82	71	2.57	66	3.46	57	1.99
53	3.18	50	2.21	50	2.62	45	1.90
38	2.69	36	2.81	34	2.38	29	2.19
28	2.60	27	2.06	26	1.71	21	2.12
20	1.63	20	1.84	19	1.67	14	1.50
13	1.28	13	1.50	13	1.44	8	.74
7	.81	5	.53	4	.51	3	.44
3	.36	2	.22	2	.22	1	.16
1	.20	0	.22	0	.10	0	.06
0	.01	0	.20	0	.15		

PARAMETER VALUES

PS :	3.76	ALPHA :	.115	BETA :	.0054
(3.54,	3.98)	(.108,	.123)	(.0044,	.0065)

SAMPLE TEMPERATURE .1 C INCUBATION TEMPERATURE 7.0 C

CHLOROPHYLL :	.27	RNA :	2.09	PHOSPHATE :	.88
CARBON :	73	DNA :	.82	NITRATE :	2.08
NITROGEN :	19	ATP :	.07	SILICATE :	13.06
		PROTEIN:	18.50	AMMONIA :	.86

LOUIS SAINT LAURENT

LAT 71 07.9'N LONG 145 09.'W STATION NO. 113
DATE 9/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
600	.85	558	.97	550	.86	528	1.07
465	.92	435	1.11	435	.99	412	1.17
306	.95	291	1.06	198	1.31	196	1.03
190	1.33	190	.94	120	1.13	118	1.38
81	1.39	77	1.03	76	1.00	63	1.45
59	.99	57	1.29	53	1.07	43	.85
42	1.14	41	1.09	37	1.44	33	.91
30	1.00	29	1.48	25	1.18	23	.91
22	.88	22	.72	20	.90	18	.63
18	.66	15	.60	14	.87	9	.37
7	.31	5	.22	5	.27	4	.17
3	.14	2	.13	2	.11	1	.07
1	.04	1	.04	1	.02	0	.04
0	.04	0	.01	0	.06		

PARAMETER VALUES

PS :	1.31	ALPHA :	.066	BETA :	.0008
(1.24,	1.38)	(.059,	.072)	(.0005,	.0010)

SAMPLE TEMPERATURE 1.0 C INCUBATION TEMPERATURE 4.5 C

CHLOROPHYLL :	1.08	RNA :	3.44	PHOSPHATE :	1.02
CARBON :	40	DNA :	3.73	NITRATE :	3.59
NITROGEN :	17	ATP :	.16	SILICATE :	12.53
		PROTEIN:	27.90	AMMONIA :	.24

LOUIS SAINT LAURENT

LAT 70 04.1'N LONG 164 53.'W STATION NO. 114
DATE 10/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
655	1.13	600	1.37	558	1.61	550	1.36
469	1.15	468	1.33	404	1.44	401	1.54
333	1.23	304	1.52	265	1.40	185	1.30
169	1.39	165	1.48	115	1.49	110	1.25
103	1.26	100	1.43	81	1.43	80	1.47
74	1.25	69	1.30	57	1.09	54	1.34
50	1.26	49	1.26	38	1.11	37	1.02
36	.82	31	1.15	27	.77	27	.85
26	.93	21	1.17	19	.55	19	.64
18	.72	14	.40	13	.45	12	.43
12	.45	7	.27	6	.21	5	.13
4	.14	3	.08	2	.10	2	.06
1	.06	1	.01	0	.05	0	.01
0	.01	0	.00	0	.01	0	.00
0	.00						

PARAMETER VALUES

PS :	ALPHA :	BETA :
1.47	.048	.0002
(1.41, 1.53)	(.045, .051)	(.0001, .0004)

SAMPLE TEMPERATURE 2.5 C INCUBATION TEMPERATURE 10.0 C

CHLOROPHYLL :	.58	RNA :	1.23	PHOSPHATE :	1.01
CARBON :	87	DNA :	.63	NITRATE :	2.40
NITROGEN :	23	ATP :	.07	SILICATE :	15.69
		PROTEIN:	35.40	AMMONIA :	2.22

LOUIS SAINT LAURENT

LAT 67 02.0'N LONG 168 16W'W STATION NO. 115
DATE 11/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
592	1.28	571	1.26	533	1.49	528	1.47
469	1.91	401	1.72	372	1.86	368	1.72
250	1.98	237	1.80	216	1.84	205	1.86
148	1.86	126	1.78	117	2.05	105	1.84
71	1.79	69	1.73	66	1.80	62	1.85
41	1.54	39	1.54	37	1.45	35	1.59
22	1.24	22	1.22	20	1.15	20	1.22
15	.82	14	.78	14	.83	13	.82
9	.49	9	.45	8	.52	7	.50
5	.31	5	.30	5	.29	5	.34
3	.22	3	.20	3	.19	3	.20
1	.13	1	.09	1	.06	1	.07
0	.05	0	.04	0	.04	0	.03
0	.01	0	.02	0	.01	0	.02
0	.01	0	.02	0	.02	0	.01

PARAMETER VALUES

PS : 2.12	ALPHA : .074	BETA : .0013
(2.06, 2.17)	(.071, .076)	(.0011, .0015)

SAMPLE TEMPERATURE 4.5 C INCUBATION TEMPERATURE 9.0 C

CHLOROPHYLL	: 2.81	RNA	: 5.73	PHOSPHATE	: .78
CARBON	: 215	DNA	: 5.40	NITRATE	: 3.46
NITROGEN	: 43	ATP	: .27	SILICATE	: 26.05
		PROTEIN	: 90.50	AMMONIA	: 1.54

LOUIS SAINT LAURENT

LAT 63 08.2'N LONG 167 07.'W STATION NO. 116
DATE 12/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
537	2.02	422	1.79	389	1.94	370	1.93
220	1.72	215	1.97	211	2.07	136	1.71
131	1.82	110	1.92	101	1.99	72	1.80
71	1.82	61	1.82	57	1.89	46	1.76
46	1.70	34	1.77	34	1.82	32	1.69
31	1.49	24	1.32	21	1.38	20	1.28
18	1.29	15	1.06	14	.98	13	1.02
12	.93	10	.75	8	.68	8	.61
7	.61	6	.49	6	.46	5	.47
4	.45	4	.31	2	.29	2	.16
1	.12	1	.08	0	.08	0	.06
0	.05	0	.04	0	.04	0	.02
0	.03	0	.02	0	.02	0	.02
0	.02	0	.02	0	.02		

PARAMETER VALUES

PS : 1.91 ALPHA : .103 BETA : .0000

(1.87, 1.94) (.100, .106) (-.0001, .0001)

SAMPLE TEMPERATURE 6.8 C INCUBATION TEMPERATURE 9.0 C

CHLOROPHYLL :	1.70	RNA :	8.67	PHOSPHATE :	.63
CARBON :	81	DNA :	9.42	NITRATE :	.00
NITROGEN :	24	ATP :	.23	SILICATE :	9.09
		PROTEIN:	90.50	AMMONIA :	.91

LOUIS SAINT LAURENT

LAT 61 20.3'N LONG 168 44.'W STATION NO. 117
DATE 12/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
583	1.96	533	2.26	387	2.81	385	3.01
251	3.49	215	3.21	126	3.07	114	3.04
74	3.18	71	2.87	46	2.57	41	2.96
37	2.39	36	2.35	32	2.53	27	2.39
26	2.41	26	2.69	19	1.98	17	1.82
16	2.82	15	3.10	13	1.34	12	1.20
10	2.94	8	.87	7	.97	5	3.05
5	.61	4	.57	3	3.04	2	2.25
1	2.33	1	.06	0	.14	0	.13
0	.10	0	.04	0	.01	0	.02
0	.04	0	.00	0	.21	0	.01
0	.02						

PARAMETER VALUES

PS : 2.65 (2.43, 2.87)

ALPHA : .431 (.318, .543)

BETA : .0000 (-.0009, .0009)

SAMPLE TEMPERATURE 8.5 C

INCUBATION TEMPERATURE 11.0 C

CHLOROPHYLL	1.64	RNA	8.60	PHOSPHATE	.52
CARBON	80	DNA	9.22	NITRATE	.00
NITROGEN	25	ATP	.35	SILICATE	5.84
		PROTEIN	95.20	AMMONIA	.27

LOUIS SAINT LAURENT

LAT 57 48.6'N LONG 167 16W'W STATION NO. 118
DATE 13/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
499	3.40	469	3.68	444	3.71	423	4.81
376	5.00	370	4.87	363	4.45	359	5.27
260	5.42	253	5.16	232	5.87	220	5.79
169	5.10	148	4.94	135	5.72	126	5.64
97	4.84	86	5.41	76	5.30	71	5.74
59	5.27	57	4.57	50	4.60	48	5.00
36	3.95	35	3.37	33	3.65	32	3.60
24	2.69	23	2.69	23	2.75	21	2.54
16	1.75	15	1.65	15	1.64	15	1.73
11	1.06	11	1.29	10	1.18	10	1.02
8	.79	7	.70	7	.62	6	.59
5	.32	4	.33	3	.19	2	.16
1	.09	1	.10	1	.01	1	.04

PARAMETER VALUES

PS : 7.42 ALPHA : .145 BETA : .0096

(6.97, 7.87) (.138, .151) (.0076, .0115)

SAMPLE TEMPERATURE 7.8 C INCUBATION TEMPERATURE 11.0 C

CHLOROPHYLL	: 1.36	RNA	: 8.92	PHOSPHATE	: 1.04
CARBON	: 96	DNA	: 7.33	NITRATE	: 11.62
NITROGEN	: 34	ATP	: .25	SILICATE	: 36.82
		PROTEIN	: 44.90	AMMONIA	: 1.88

LOUIS SAINT LAURENT

LAT 52 21.9'N LONG 150 37.'W STATION NO. 119
DATE 16/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
575	.54	528	.67	511	.92	511	.90
380	1.55	383	1.38	355	1.89	346	1.91
224	2.43	221	2.60	211	2.42	190	2.24
116	2.54	112	2.49	104	2.42	93	2.50
63	2.48	59	2.38	58	2.60	55	2.25
38	2.04	34	1.98	30	1.98	27	1.91
25	1.80	22	1.62	17	1.71	17	1.69
15	1.24	14	1.20	11	1.05	10	1.18
9	.74	8	.87	6	.66	6	.48
6	.70	5	.43	4	.26	4	.40
4	.27	3	.23	2	.19	2	.18
1	.05	1	.02	0	.03	0	.02
0	.01	0	.02				

PARAMETER VALUES

PS : 3.57 ALPHA : .103 BETA : .0084

(3.38, 3.77) (.098, .108) (.0072, .0096)

SAMPLE TEMPERATURE 8.5 C INCUBATION TEMPERATURE 10.6 C

CHLOROPHYLL : .52 RNA : 4.01 PHOSPHATE : 1.12

CARBON : 51 DNA : 5.24 NITRATE : 12.23

NITROGEN : 18 ATP : .19 SILICATE : 30.92

PROTEIN: 37.00 AMMONIA : .42

LOUIS SAINT LAURENT

LAT 51 32.3'N LONG 144 37.'W STATION NO. 120
DATE 17/10/79 DEPTH 0 M

I	P	I	P	I	P	I	P
592	1.97	558	2.30	558	2.14	427	3.75
427	2.70	422	3.54	360	3.52	359	3.51
245	4.06	241	4.13	232	3.96	123	3.80
122	3.98	119	4.06	68	3.83	67	3.64
66	3.95	59	3.79	46	3.32	44	3.50
39	3.38	38	3.40	29	3.01	28	2.82
24	3.06	24	2.70	18	2.16	17	2.15
15	2.05	14	2.02	12	1.57	10	1.54
10	1.50	9	1.46	7	1.02	6	1.07
6	.99	5	.90	4	.80	4	.68
4	.67	3	.61	2	.26	0	.14
0	.07	0	.10	0	.03	0	.03
0	.04	0	.04	0	.03	0	.02
0	.00	0	.01				

PARAMETER VALUES

PS : 4.75	ALPHA : .165	BETA : .0050
(4.58, 4.92)	(.158, .172)	(.0043, .0057)

SAMPLE TEMPERATURE 10.8 C INCUBATION TEMPERATURE 14.0 C

CHLOROPHYLL :	.76	RNA :	6.79	PHOSPHATE :	.92
CARBON :	54	DNA :	7.08	NITRATE :	9.78
NITROGEN :	21	ATP :	.18	SILICATE :	22.13
		PROTEIN:	52.20	AMMONIA :	.63

LOUIS SAINT LAURENT

LAT 73 40.4'N
DATE 23/09/79

LONG 80 52.0'W

STATION NO. 81
DEPTH 10 M

I	P	I	P	I	P	I	P
622	1.44	613	2.19	562	2.00	550	1.84
423	2.47	364	2.49	339	1.99	281	2.72
241	2.36	207	2.69	174	2.98	136	2.68
114	2.50	101	2.87	77	2.33	70	2.73
55	2.53	55	1.53	50	2.45	38	1.43
37	2.25	37	2.58	29	1.12	29	1.72
29	1.20	28	1.67	23	.84	23	1.33
22	.90	22	.90	14	.70	13	.73
11	.47	9	.45	7	.36	6	.36
5	.26	4	.27	3	.15	3	.16
2	.24	1	.29	1	.20	1	.24
1	.15	1	.15				

PARAMETER VALUES

PS : 3.46
(3.15, 3.77)

ALPHA : .068
(.063, .073)

BETA : .0036
(.0025, .0048)

SAMPLE TEMPERATURE 0.0 C

INCUBATION TEMPERATURE 3.6 C

CHLOROPHYLL : 3.08
CARBON : 132
NITROGEN : 31

RNA : 14.08
DNA : 5.47
ATP : .48
PROTEIN: 95.80

PHOSPHATE : .42
NITRATE : .57
SILICATE : 4.54
AMMONIA : 7.97

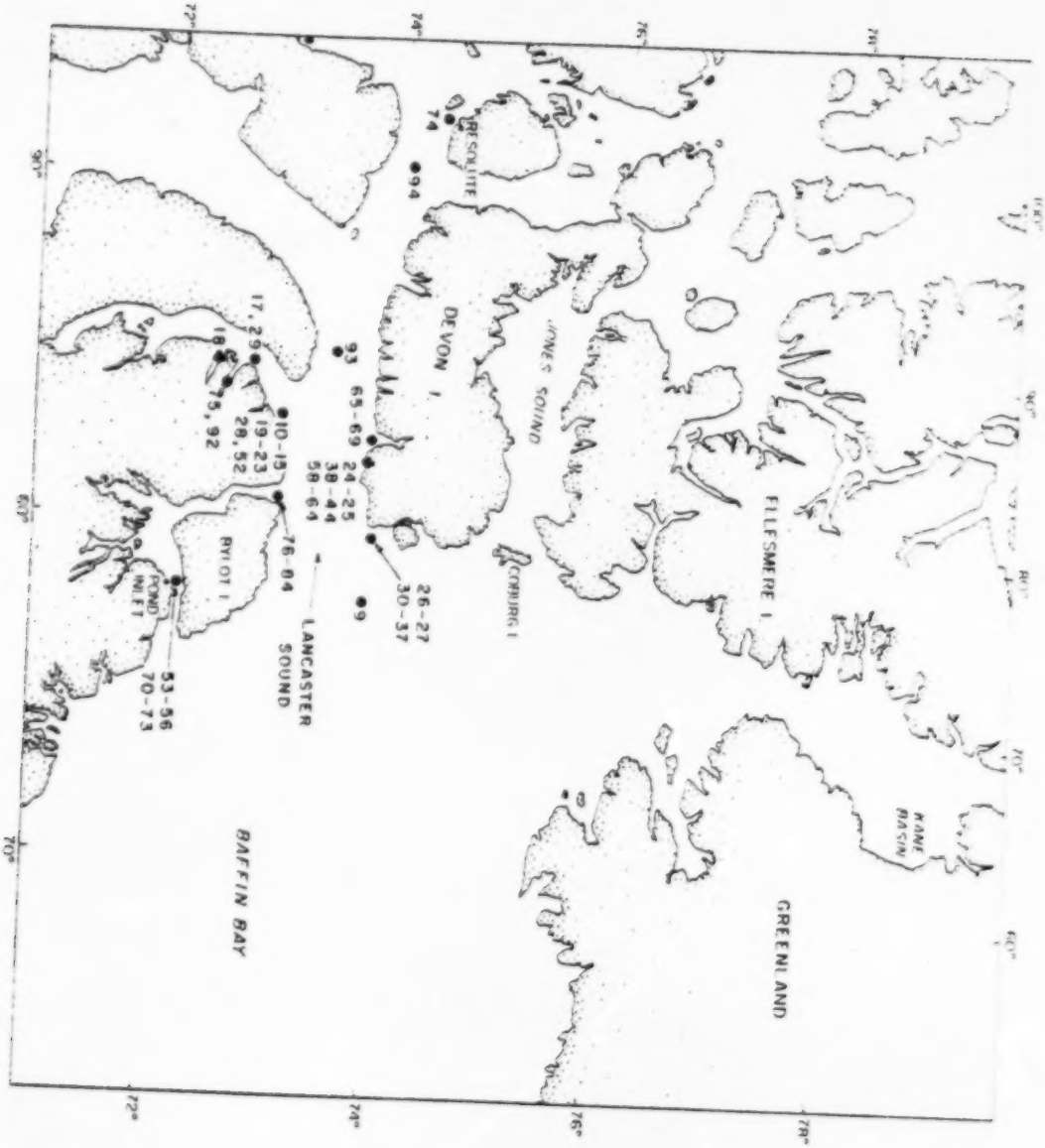

Fig. 1. Location of sampling stations in Lancaster Sound.